The OIL WEEKLY

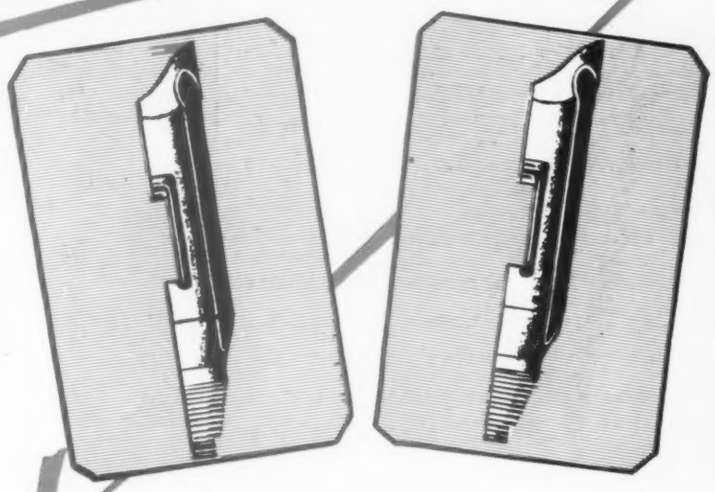
15¢ A COPY

Exclusively Devoted To The Production and Transportation of Oil and Gas

Engineering News Statistics

September 12 1930 **Volume 58. No. 13**

They "look" alike



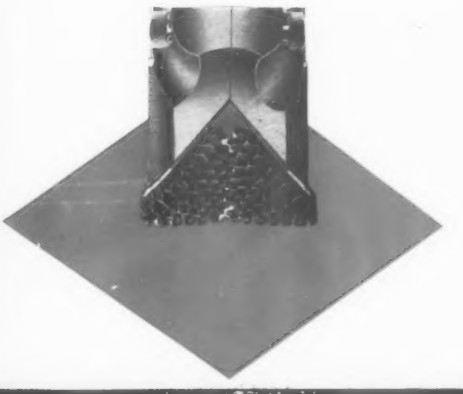
but

one is STEEL
***..the other* WOOD**

Design is important in any oil field product . . . . but it is after design has been perfected—that the qualities for superior performance and length of life are produced.

—Hughes Rock Bits and Cones gave to the industry a "standard of design"—but what is more important, they gave a standard of results in economy, speed and safety in drilling.

—Hughes Tools are acknowledged leaders throughout the oil fields of the world.

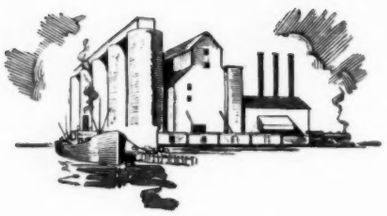


HUGHES TOOL COMPANY

Service Plants
Los Angeles
Oklahoma City
Midland

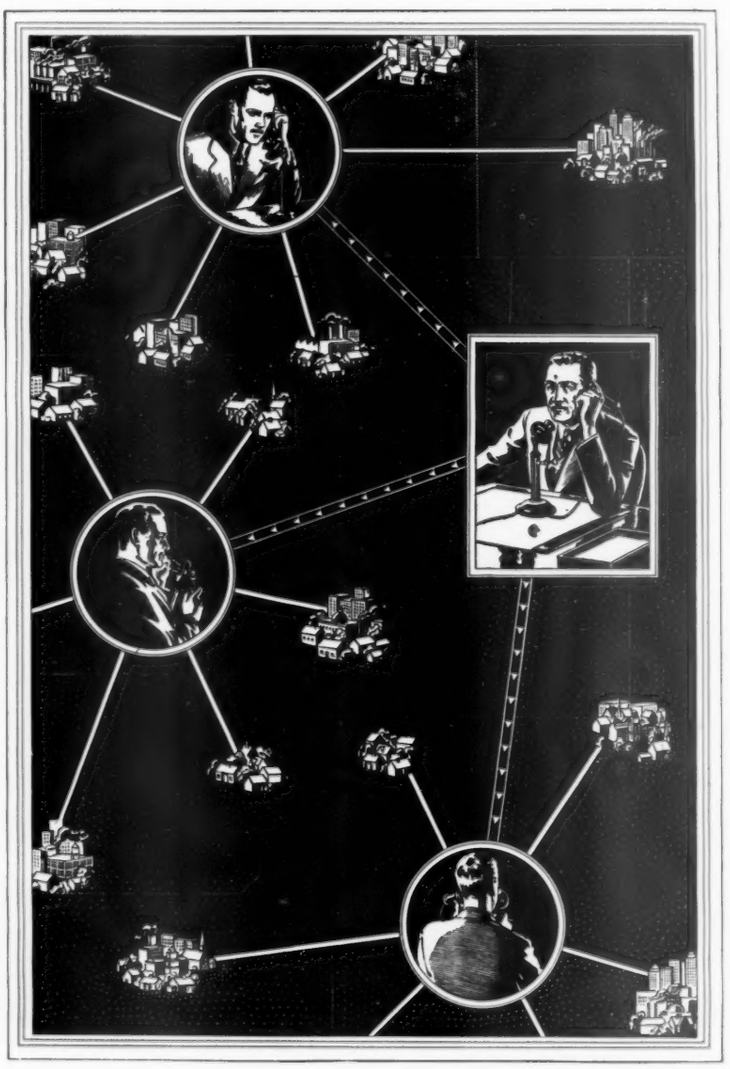
Main Office and Plant
HOUSTON,
TEXAS

Export Office
Woolworth Bldg.,
New York City



Developing Business by Telephoning customers from Key Towns

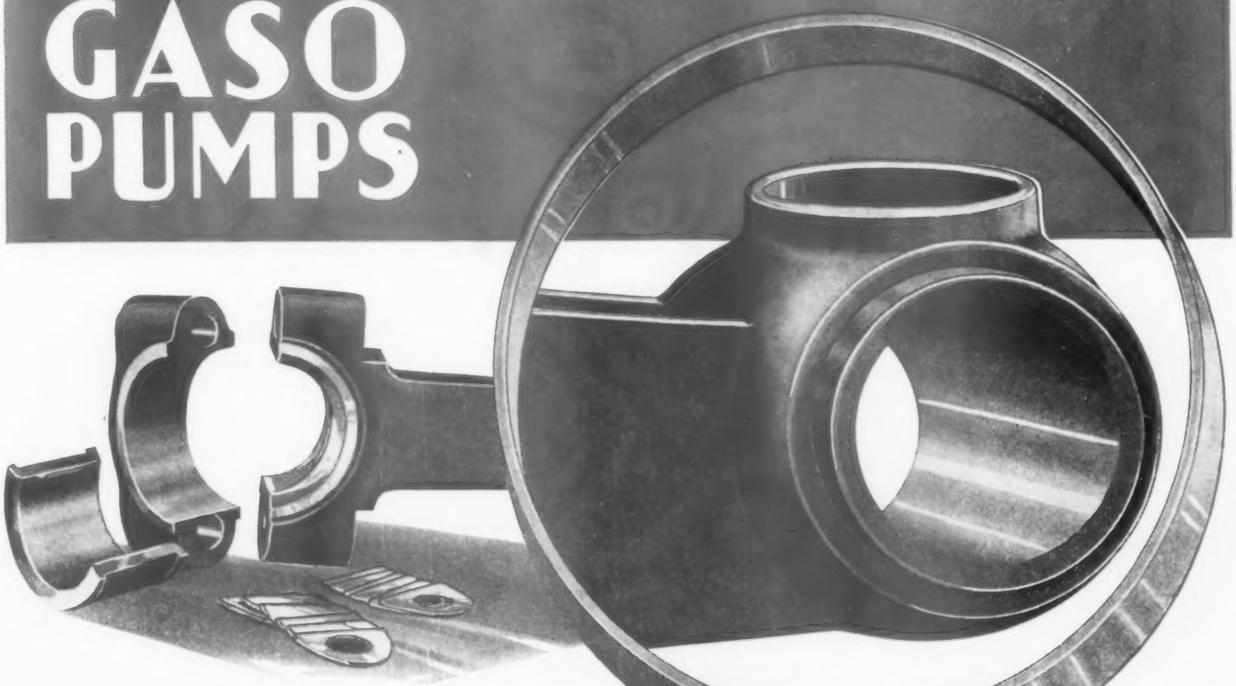
THE Key Town Plan of telephoning is so flexible that it will fit practically any sales program. A building materials company needs to keep in close touch with customers over a wide area in four Western states. Its salesmen visit certain key cities in person and telephone those nearby. In this way, they can contact each customer more frequently and at less expense. Learn beforehand of new building projects. Handle orders more promptly. Communicate with the home office on new developments accurately and without delay.



A rubber footwear company co-ordinates its Key Town activities with the weather. Representatives maintain close contact with customers regularly in person. Then when stormy weather breaks, they immediately telephone, using Sequence Calling Lists to put the calls through in quick succession. The result is a rush of orders.

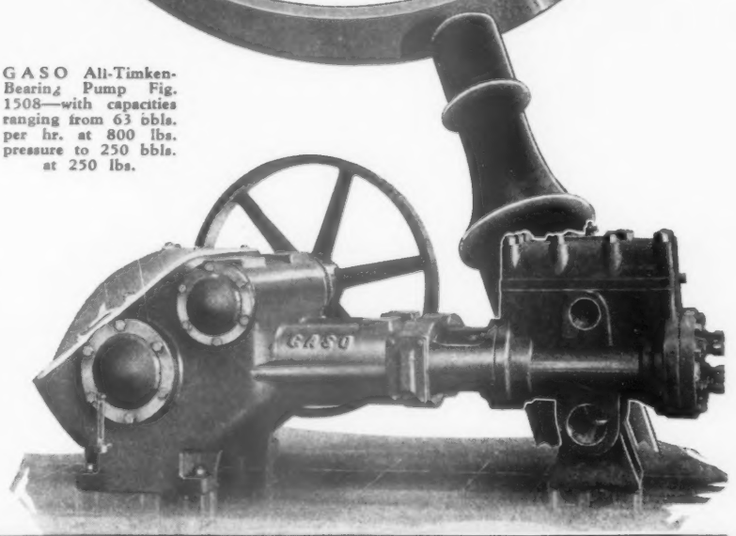
The Key Town Plan can be custom-fitted to your business. The local Bell Business Office will gladly have a representative show you how it will build business and cut selling costs. Telephoning is inexpensive. Typical station-to-station day rates: Philadelphia to New York, 50c. Chicago to Seattle, $6.50. Atlanta to St. Louis, $1.95. For all inter-city business, the telephone is *Quick . . . Effective . . . Convenient.*

Study the DETAILS of GASO PUMPS



DETAILED examination of GASO Pumps reveals clearly why these pumps are so efficient in the use of power, so durable and so economical to maintain. For example note the connecting rods of GASO Fig. 1508 Enclosed Duplex Power Pump .... made of best grade open hearth steel, H construction, heavy yet carefully balanced, removable babbitt lined steel shell at crank-end, crosshead end fitted with bronze bushing, and all bushings honed to a highly polished finish. In *every* detail GASO Pumps are designed and built for easy running, long life and ease of adjustment.

GASO All-Timken-Bearing Pump Fig. 1508—with capacities ranging from 63 bbls. per hr. at 800 lbs. pressure to 250 bbls. at 250 lbs.



GASO PUMP & BURNER MFG. COMPANY
Tulsa, Okla., U. S. A.
Dallas, Texas **New York, N. Y.**

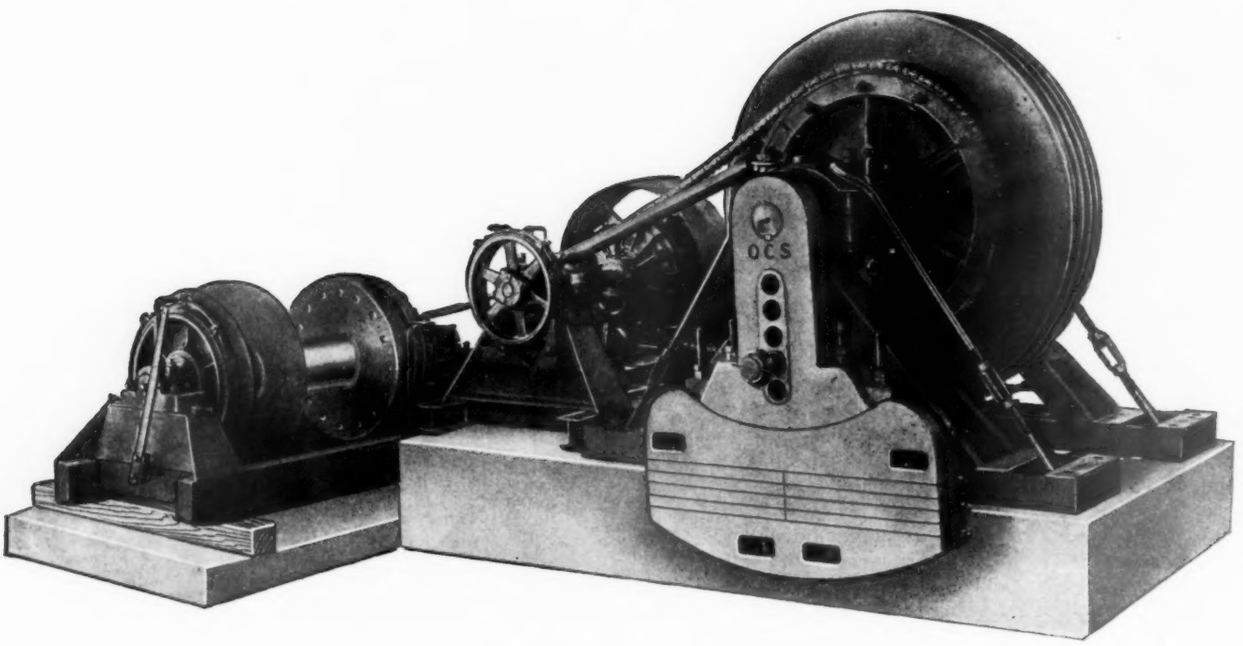
GASO PUMPS
for every oil industry need

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $3.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879

OCS

Universal Rig Fronts

Any Engine **Any Motor**



for Drilling or Pumping

The Deepest Wells in the World

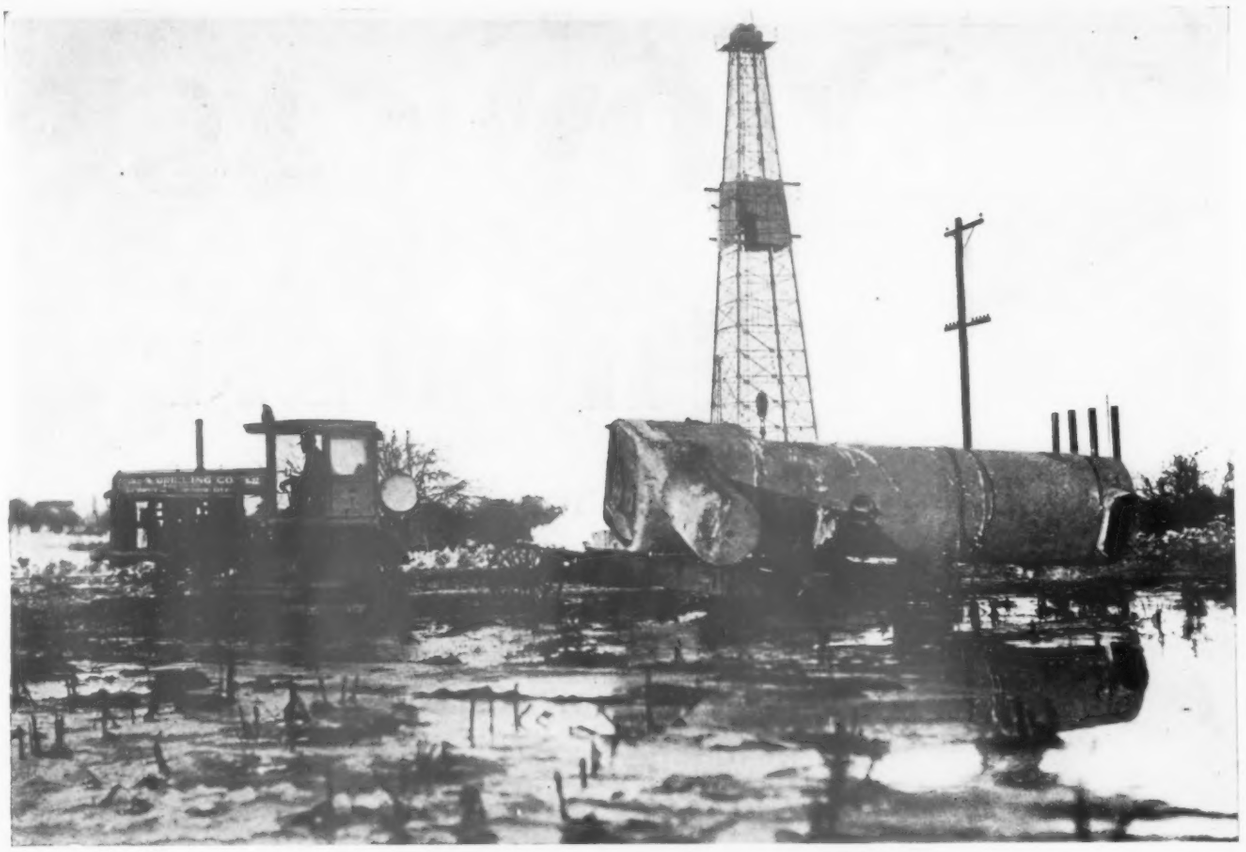
Manufactured by

THE OIL COUNTRY SPECIALTIES MFG. CO.

COFFEYVILLE, KANSAS

HYNES, CALIF. TULSA; SEMINOLE, OKLA. SWEETWATER; HOUSTON, TEXAS HOBBS, N. MEXICO

HILLMAN-KELLEY, INC., 2437-39 HUNTER ST., LOS ANGELES, CAL.



"CATERPILLARS" CONQUER

"CATERPILLAR" Tractors are at work when other equipment is idle. Wide tracks and generous power can cope with mud and sand and dust. "Caterpillars" haul the first load of machinery 'cross country to a new lease—they furnish the power for all sorts of tasks—they pull rod and tubing—they lay pipe and backfill trenches — they do police work around a refinery. Amazing traction and plentiful power win the loyalty of oil men everywhere.

Prices—f. o. b. Peoria, Illinois

TEN . . .	$1100	TWENTY .	$1900
FIFTEEN .	$1450	THIRTY .	$2375
SIXTY . .	$4175		

CATERPILLAR
REG U.S. PAT. OFF.
TRACTOR

Caterpillar Tractor Co.

PEORIA, ILL. *and* SAN LEANDRO, CALIF., U. S. A.

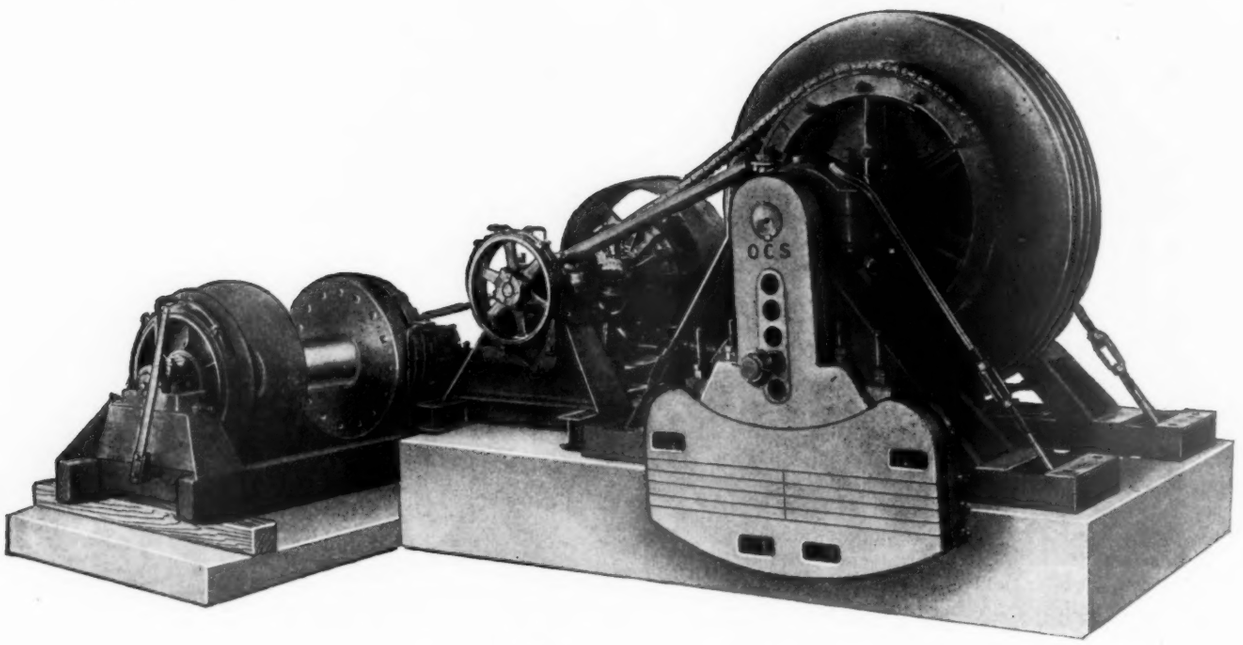
Track-type Tractors Combines Road Machinery

(There's a "Caterpillar" Dealer Near You)

OCS

Universal Rig Fronts

Any Engine **Any Motor**



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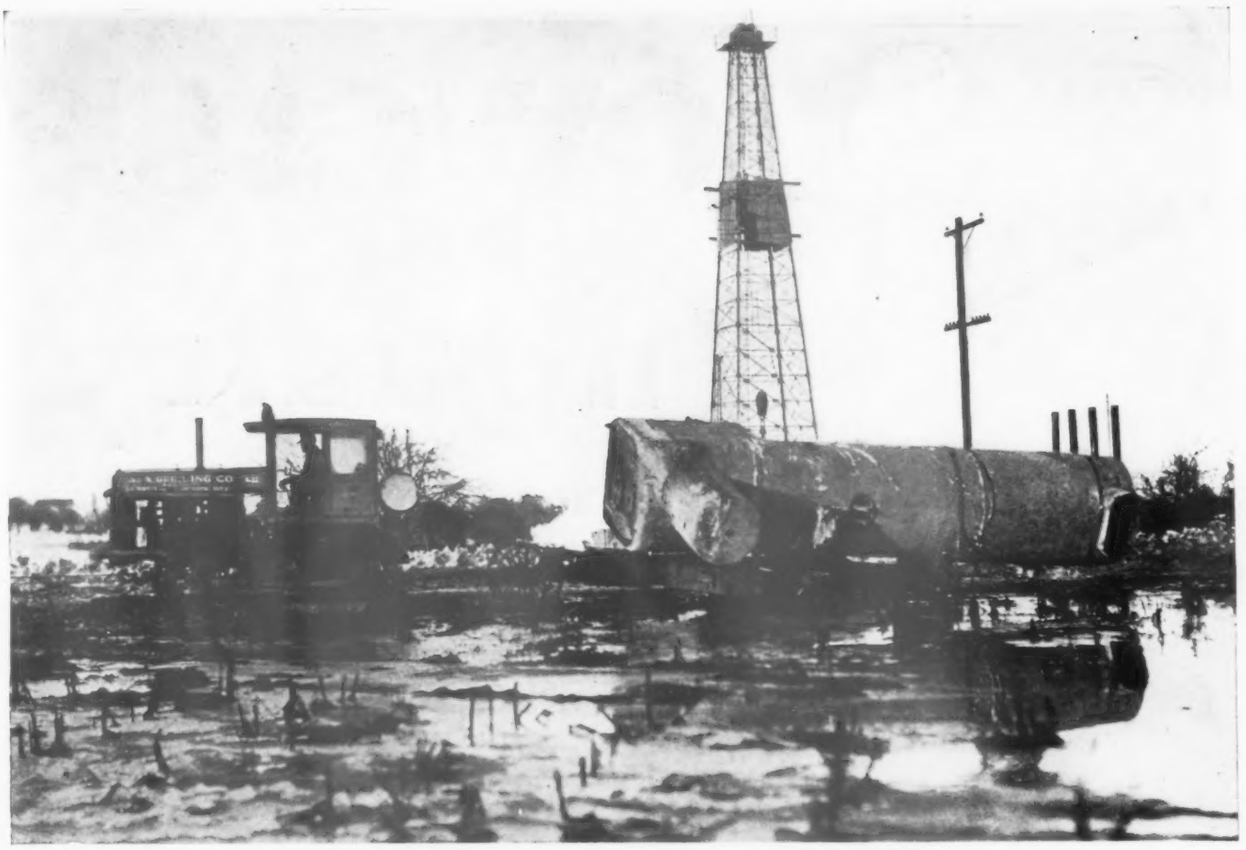

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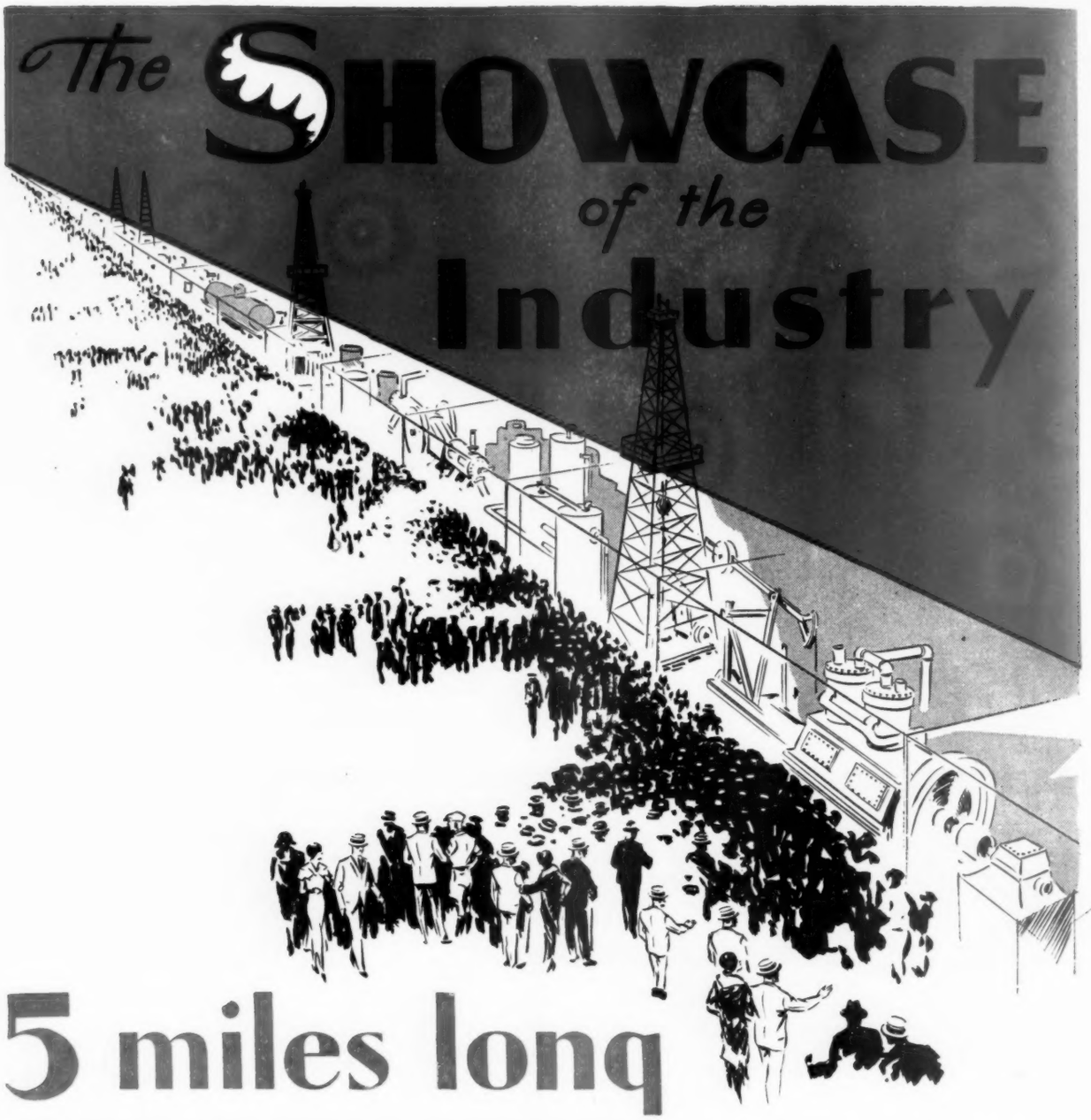


INTERNATIONAL PETROLEUM EXPOSITION
and Congress
Tulsa Oklahoma
Oct. 4-11 1930

Be in Tulsa Oct. 4th for this international market of petroleum equipment . . . see more and learn more at one time and place than you could discover otherwise by traveling many months and many thousands of miles. Get acquainted with ALL the new and improved methods and machinery for your branch of the industry, whether it be prospecting, producing, refining, transporting or marketing.

Larger Exposition grounds—added buildings—improved comfort facilities and conveniences. Reduced fares on all railways. Make your reservations now. For any information, address Wm. B. Way, Gen. Mgr., International Petroleum Exposition, Tulsa, Okla., U. S. A.

IDECO 72" Traveling Blocks

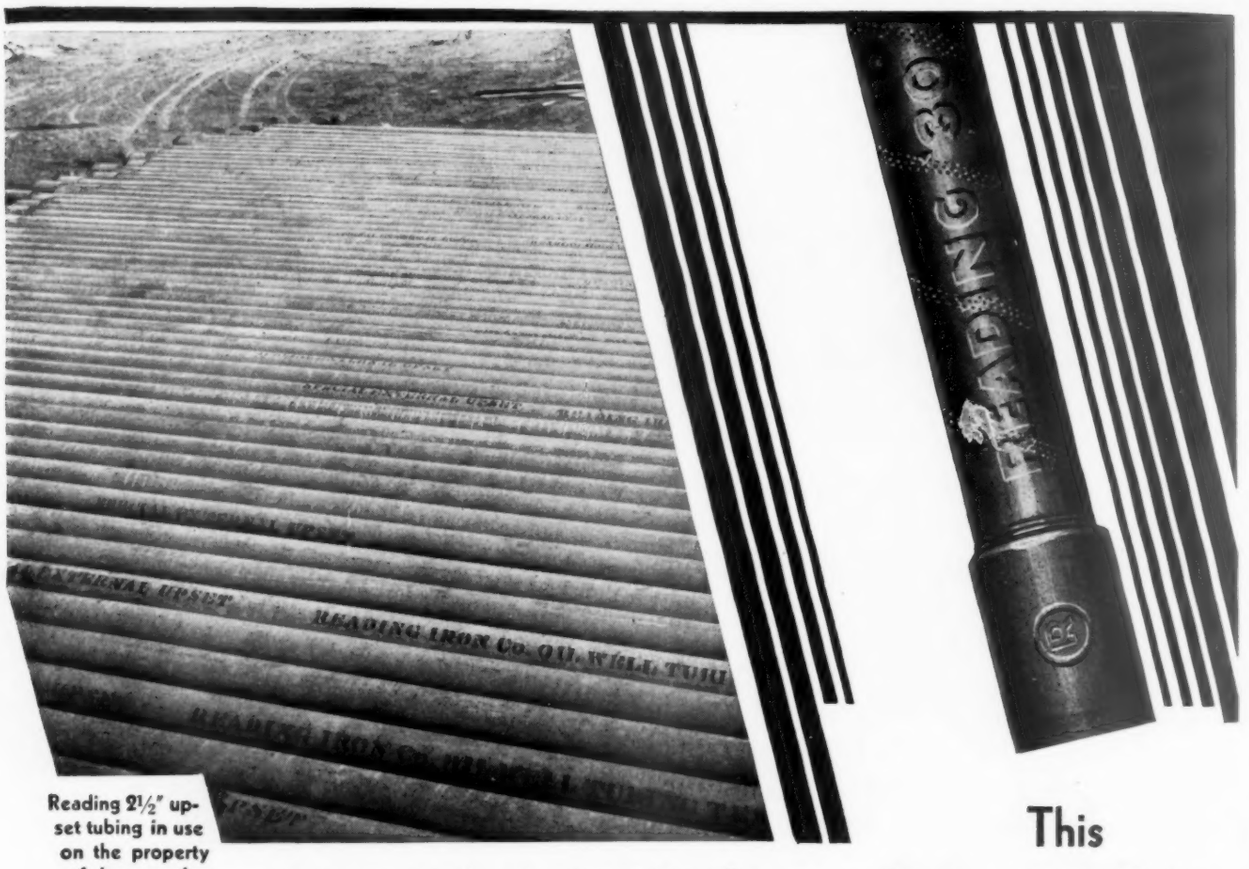
Strength, speed and easy operation—the factors necessary to meet the ever-increasing demand for better drilling equipment.

The Ideco 72" Traveling Block has already proven its superiority in the field. Familiarity with working conditions has governed its design. The number of parts are minimized. The block is streamlined so that no projections exist to catch on the finger board or interfere with speedy operation. Proportioned to prevent overturning or fouling of lines and heavy enough to fall rapidly in the derrick without load. Equipped with Heavy Duty Roller Bearings for ease and speed and provided with Alemite lubrication.

A worthy companion to the Ideco Line of Drilling and Pumping equipment.

THE INTERNATIONAL DERRICK & EQUIPMENT CO., Columbus, Ohio, Beaumont, Texas, Los Angeles, Cal.

Plants: Columbus, Marietta, Delaware, Ohio; Torrance, California; Beaumont, Houston, Texas. *District Offices:* New York City, N. Y.; Pittsburgh, Pennsylvania; Wichita, Kansas; Tulsa, Oklahoma; Shreveport, Louisiana; Ft. Worth, Beaumont, Texas; Maracaibo, Venezuela. *Warehouses and Stocks:* Columbus, Delaware, Ohio; Seminole, Tonkawa, Drumright, Okemah, Maud, Sasakwa, Allen, Oklahoma City, Oklahoma; El Dorado, Wichita Heights, McPherson, Kansas; Houston, Beaumont, Big Spring, Odessa, Pyote, Pampa, Borger, Mexia, Luling, Wichita Falls, Grand Saline, Seguin, Hebbronville, Pettus, Beeville, Texas; Lake Charles, Shreveport, Zwolle, Louisiana; Smackover, El Dorado, Arkansas; Bakersfield, Taft, Torrance, Calif.; Hobbs, N. M.
Export Offices—90 West Street, New York City; Columbus, Ohio; Houston, Texas; Los Angeles, California. 705



Reading 2½" upset tubing in use on the property of a large producing corporation

This Galvanized Tubing Stays Galvanized

Galvanizing sticks to Reading 5-Point Tubing closer than a brother. The texture of this pipe—with its thousands of minute surface irregularities—holds the coating in a bulldog grip, *and holds more of it!* That's why there is less flaking or peeling where Reading 5-Point Galvanized Tubing is used.

Reading 5-Point Galvanized Tubing is made of the original, Genuine *Puddled* Wrought Iron—inherently resistant to corrosion and famous for its better threading. Remember that the *threads* on Reading 5-Point Galvanized Couplings are galvanized, too.

As an added improvement, all Reading Galvanized Couplings for Reading 5-Point Tubing are now furnished with galvanized threads.

Reading pipe distributed by:
Frick-Reid Supply Corp.
Bradford Supply Co.
Republic Supply Co.
Superior Tube Co.
Our own stocks at Houston, Texas

READING IRON COMPANY

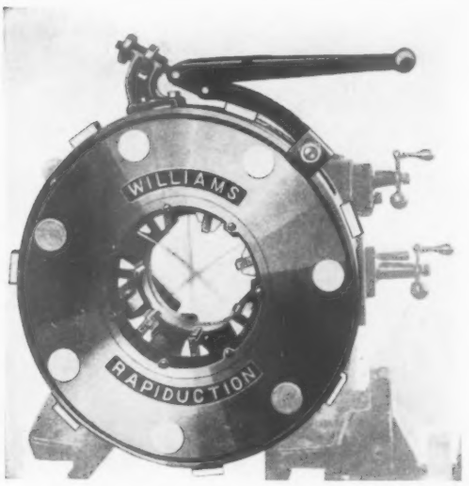
Reading, Pennsylvania

Atlanta . Baltimore . Cleveland . New York . Philadelphia . Boston
Cincinnati . St. Louis . Chicago . New Orleans . Buffalo . Houston . Tulsa
Seattle . San Francisco . Detroit . Pittsburgh . Los Angeles . Kansas City

5 POINT PIPE
READING
GENUINE PUDDLED WROUGHT IRON

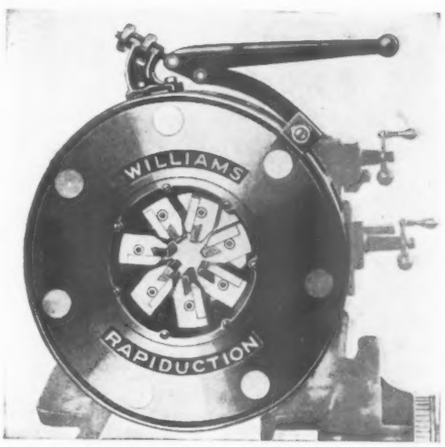
GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM ⅛ TO 20 INCHES

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron



Die-head showing dies in open position and illustrating Cascade oiling system.

Here's One Good Way to Keep Pipe Threading Costs at a Minimum



Die-head showing dies in closed position

If you want to save time and labor on your production pipe threading and cutting-off jobs, without the expense of a new high speed machine, put a Rapiduction Die Head on your present machine.

These famous die heads, that speed-up threading and cutting-off operations, can be attached to practically any machine, from 2 inch to 24 inch capacity, without difficulty.

Once you have a Rapiduction Die Head on your machine you can thread—with one set of dies—all sizes of pipe within the range of the machine where the pitch of the thread does not change. A quick movement of the die lever does the trick.

Ask your dealer for complete information on the savings that a Rapiduction Die Head will make for you. He will gladly inspect your present equipment and explain how easily you can attach a Rapiduction Die Head to it. There's no obligation. Or, write

Manufacturers of the most complete line of hand and power operated pipe and bolt threading equipment in the world.

THE OSTER MANUFACTURING COMPANY
JOINED FOR GREATER SERVICE
WILLIAMS TOOL CORPORATION

Sales Office: 2064 East 61st Place, Cleveland, Ohio
Branch Offices: Boston, New York, Philadelphia, Chicago

BOXES AND PINS

Spang puts a special analysis steel into these Boxes and Pins—then heat-treats them in specially built, insulated furnaces under automatic control. Years of study have produced the knowledge . . . modern equipment provides the means . . . extensive field records prove the results—*maximum wear and service.*

Rough turned and drilled Boxes and Pins are furnished to shops in all oil and gas fields. The shops finish them to any gauge desired.

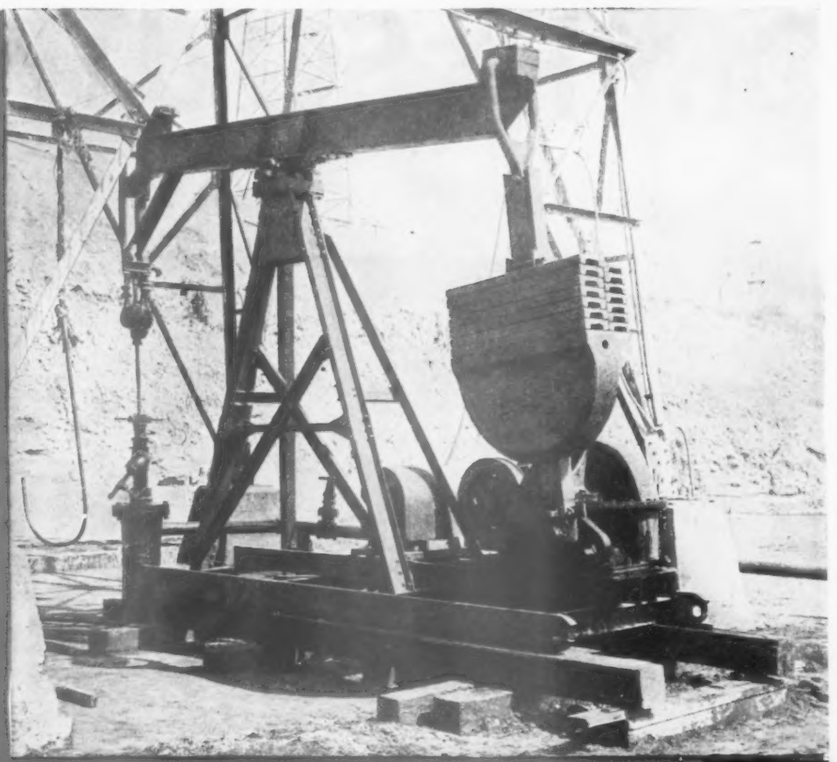
Have your nearest shop furnish and weld on the next Box or Pin you need. Insist on Spang Boxes and Pins because they're *"the higher standard."*

SPANG & COMPANY
BUTLER, PENNA.

The HIGHER STANDARD

SPANG

EMSCO-FALK PORTABLE PUMPING UNITS



ANSWER the demand for a highly efficient portable pumping unit for mounting on the derrick floor, LOW IN INITIAL COST, EXCEPTIONALLY ECONOMICAL TO OPERATE and requiring MINIMUM SERVICE. For pumping wells to 4500' depth or a maximum polish rod load of 17,000 lbs.

Emsco-Falk Portable Pumping Units can be adapted equally as well to ANY TYPE OF PRIME MOVER without reduction of their high efficiency. Exceptionally easy to move out of the way when the well is being pulled.

Among its many features are the following: Vulco Multiple Rope Drive; Emsco-Falk Herringbone Double Reduction Gear with Double Wear Gear Construction; Silent Operation; Extra Large Flywheel; Airplane Type Bearings; Continuous Flow Lubrication; Gears made of best quality material obtainable and balanced throughout entire design. Guards are furnished as standard equipment for motor and Vulco drive.

Send for Advance Engineering Folder No. 95-A for complete information.

All Emsco and D & B Products (except derricks) are sold exclusively in Mid-Continent fields by the Continental Supply Co.

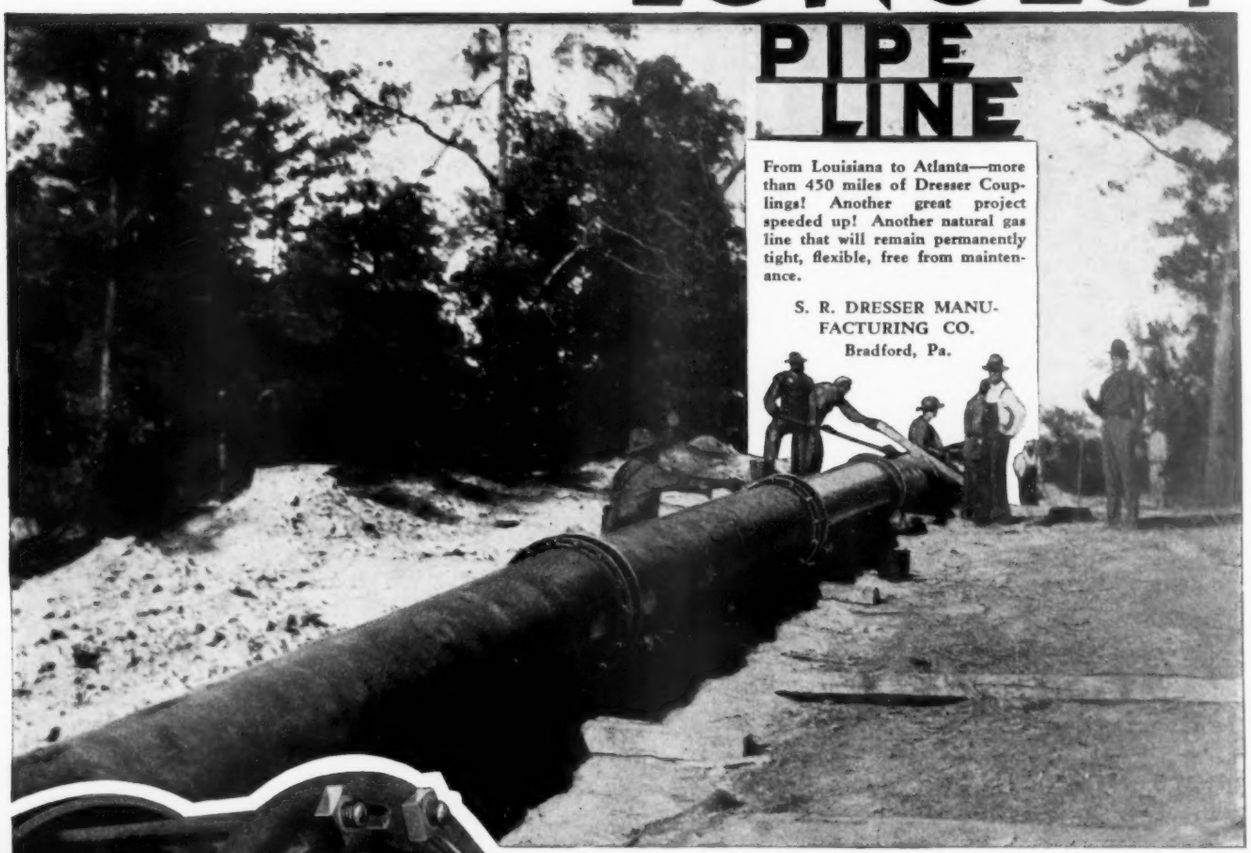
EMSCO DERRICK & EQUIPMENT CO.

6701-7101 So. Alameda St., Los Angeles, California

Export Offices: CONTINENTAL EMSCO COMPANY, INC.—74 Trinity Place, New York City

EMSCO STEEL EQUIPPED WELLS ARE SAFE

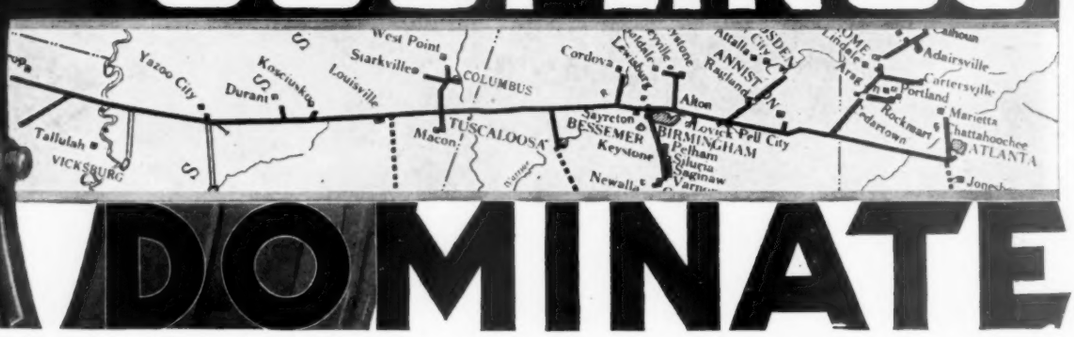
On the SOUTH'S LONGEST PIPE LINE



From Louisiana to Atlanta—more than 450 miles of Dresser Couplings! Another great project speeded up! Another natural gas line that will remain permanently tight, flexible, free from maintenance.

S. R. DRESSER MANUFACTURING CO.
Bradford, Pa.

DRESSER COUPLINGS



DOMINATE

ANNOUNCING

A NEW FINISH FOR THE OIL INDUSTRY

DU PONT DULUX

DULUX lasts decidedly longer than other protective coatings. In the majority of cases its life is from 1½ to 2 times longer. Thus it cuts painting and up-keep costs in half. The reason is simply this —Dulux resists the destructive attacks of the ultra-violet rays of sunlight which more than anything else cause a paint film to break down and expose the surface to weather and gases.

Dulux retains its original appearance and gloss longer than other protective coatings because of "controlled chalking." Rapid chalking results in early failure of a paint film, quick fading of color and loss of brilliance. Slow chalking, controlled by a new binder, enables Dulux to keep its appearance to the end. Through "controlled chalking" this new finish always presents a smooth, even, film that greatly reduces time and expense of repainting.

These features are most outstanding. But you can add others. Dulux dries in one-the time ordinary finishes require. Its remarkable adherence to the surface is best proved by its practically perfect adherence to aluminum. Its hard, smooth surface repulses dust and dirt. Its film is hard, tenacious . . . and flexible.

It has required years of work and thousands of scientific experiments to produce Dulux. Months were spent in testing raw materials and hundreds of combinations of ingredients.

THESE POINTS ABOUT DULUX may be worth thousands of dollars to you

Resists the ultra-violet rays of sunlight —paint's most destructive enemy. Lasts decidedly longer than protective coatings now in use . . . in majority of instances, 1½ to 2 times longer. Wears by "controlled chalking," which enables this finish to—

1. Keep its initial gloss and brilliancy of color 50 to 100% longer.
2. Retain an evenness of film that makes repainting easier and less costly.

Has excellent adhesion, even to aluminum.

Dries faster and can be recoated sooner than paint.

Dries to a film that is harder than ordinary finishes.

Highly resistant to the action of gasoline, moisture and destructive gases.

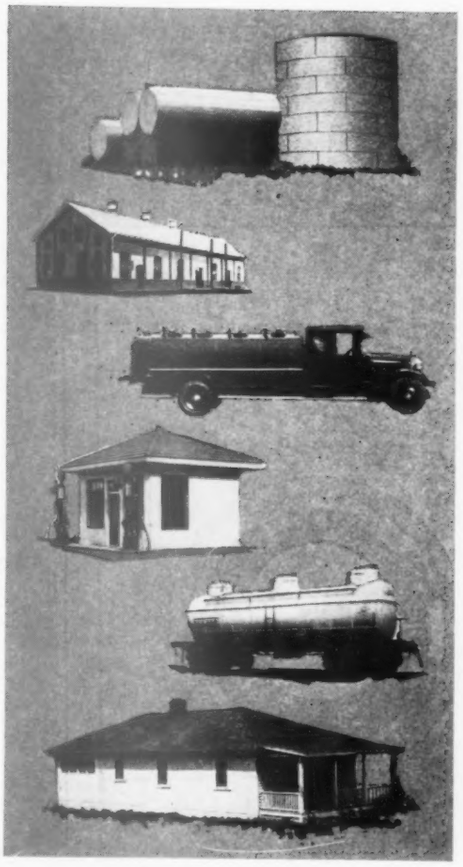
Has the hard, smooth appearance previously associated only with the highest type interior finish.

Here is something new in protective and decorative coverings for your equipment and buildings.

Dulux is a new finish—the result of a basically different formula developed to meet a long-felt need in the oil industry.

The results of this work received their final test on du Pont Paint Farms in various parts of the country. Then Dulux was again put to the test on actual oil equipment in the field. It proved its worth. And now it is offered to the entire industry.

Dulux finishes are of several types for different types of equipment and for use under different conditions. Finishing coats come in a wide range of colors.

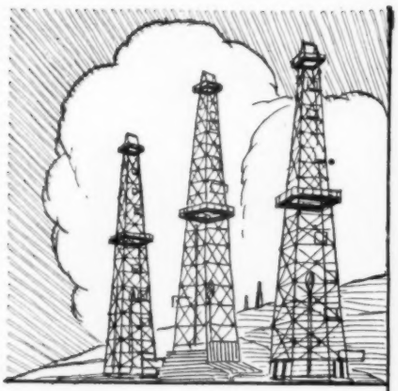


DULUX replaces all known protective and decorative coatings for property and equipment. Tank trucks, curb pumps, lubesters, filling station interior and exterior, lease houses, fixed storage tanks, and structural steel around refineries . . . any type of surface requiring a protective finish can now be best improved with Dulux.

So much can be said about this new finishing system that a complete description of its uses and advantages would carry us far beyond our allotted space on this page. This magazine, the mails and our representatives will tell you more. Meanwhile, to learn more of its importance to you and the industry, send for the technical bulletin, "DULUX for the Petroleum Industry"—and ask the duPont representative to tell you about it. E. I. du Pont de Nemours & Co., Inc., Petroleum Sales Dept., 1616 Walnut Street, Philadelphia, Pa.; 2100 Elston Avenue, Chicago; 351 California St., San Francisco.

DUPONT REG. U.S. PAT. OFF.

DULUX

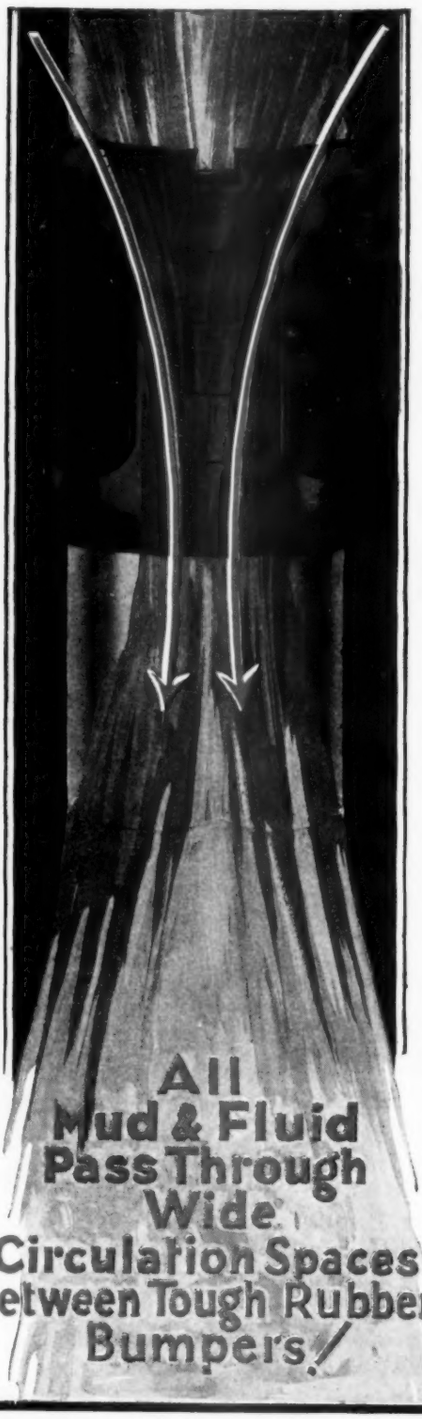


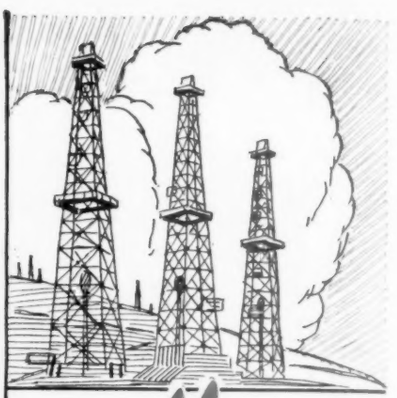
Dry

End view of Emsco Protector. Note large circulation space between bumpers. Cross sectional view at right represents a string of drill pipe being pulled — without bringing up the fluid.

A GLANCE at the above illustration shows how simply and perfectly Emsco *Free-Circulation* Protectors overcome one of the sorriest problems of drilling.

These scientifically designed protectors assure an *absolutely* dry pulling job, because the *free-circulation* space prevents the protector from pulling the fluid out of the hole when coming out with a string of drill pipe.





Pulling

Also, Emsco *Free-Circulation* Protectors permit unhampered circulation at all times. They cause no back pressure, no mudding-up of potential oil sands when running in. Actual measurements prove that the circulation space exceeds the total volume of fluid forced through the rotary hose. This fact, combined with greater durability — tighter, firmer grip on pipe—speed and ease of installation — and perfect serviceability despite any possible cuts or tears, explains the continually increasing popularity of Emsco *Free-Circulation* Protectors.

Put them on the job for greater drilling efficiency! Write now for illustrated, descriptive folder.

EMSCO FREE-CIRCULATION PROTECTORS

E. M. SMITH COMPANY
637 So. Clarence St., Los Angeles, California

Distributed by

THE CONTINENTAL SUPPLY COMPANY
General Offices: St. Louis

THE CONTINENTAL SUPPLY CO., Ltd.
224 Traders Building, Calgary, Alberta, Canada

Export Offices:
CONTINENTAL EMSCO COMPANY, INC.
74 Trinity Place, New York

London Offices:
316-317 Dashwood House, Old Broad St., E.C. 2

COLUMBIAN

presents

A "BALANCED VALVE" THIEFHOLE

(springless)

Another forward step in COLUMBIAN craftsmanship—a four-in-one combination that automatically operates at 3-oz. pressure or less than ½-oz. vacuum, respectively.

Pressed steel throughout—yet light in weight—no springs to get out of order—this new thiefhole will prove a reliable safeguard for your crude. See it! Test it! Profit!

COLUMBIAN STEEL TANK COMPANY

EST'D 1894

1401-1621 W. 12TH STREET — TANKS FOR THE WORLD — KANSAS CITY, U.S.A.

BRANCHES:

30 Church Street, New York, N. Y. 564 Market Street, San Francisco, Cal.

408 Chamber of Commerce Bldg., Denver, Colo.

DISTRIBUTORS:

California Columbian Steel Tank Co., Ltd., 617 Wright & Callender Bldg., Los Angeles
Booth Tank Builders, Maud, Oklahoma
Cypress Tank Company, Shreveport, Louisiana
Nowery J. Smith Company, 3610 McKinney Avenue, Houston, Texas
Haren Tank Company, Ponca City, Oklahoma
National Tank Company, Tulsa, Oklahoma
Martin Tank Company, Corsicana, Texas
Service Tank Comany, Oklahoma City, Oklahoma
J. W. Perron, Kevin, Montana
Leopoldo Sol & Cia, 384 Cangallo, Buenos Aires, Argentina
B. W. Deane, Port of Spain, Trinidad, B. W. I.
General Supply Company, Mexico D. F., Mexico
Mexican Trading Company, Tampico, Tamps., Mexico
F. E. Richardson & Company, Honolulu, Hawaii
P. H. Heeney, Apartado 298, Maracaibo, Venezuela

"Here, Lad—

In introducing me to your friend 'Arc Welding' you added, 'He can do his best work for us with the 'Stable-Arc' welder, because Lincoln is the admitted leader of the field.'

Now I know that there must be merit in other machines . . . so how on earth can Lincoln keep ahead?"

"Easy, Pop—

By S-P-E-E-D.

They've kept ahead by using all their head on arc welding. No part of the headwork is dissipated on other subjects. They're specialists—in a highly specialized field. Everyone from the front carpet to the steel platform in the rear (arc-welded, by the way) works for the *cause* of arc welding and for the *effect* of making the 'Stable-Arc' the best welder.

In manual welders, in automatics and in their 'Fleetweld' electrode Lincoln has the lead in speed—and transfers this speed to the welding problems of 'Stable-Arc' users.

And in saying this I don't belittle any other welders. They nearly all have merit, as you say—which keeps the Lincoln people on their toes all the time to maintain their lead.

In short, a rabbit never is so fast as when there's something behind it."

The Lincoln "Stable-Arc" Welder

— welds easier
— makes better welds
— permits greater output because of the steady uniform arc throughout entire welding range, which is the result of:

Variable voltage design
Laminated magnetic circuit
Separately-excited generator field
Double control of welding heat
All steel construction

No other welder has all these features.

The Lincoln Electric Co., Dept. No. 33-9, Cleveland, O.

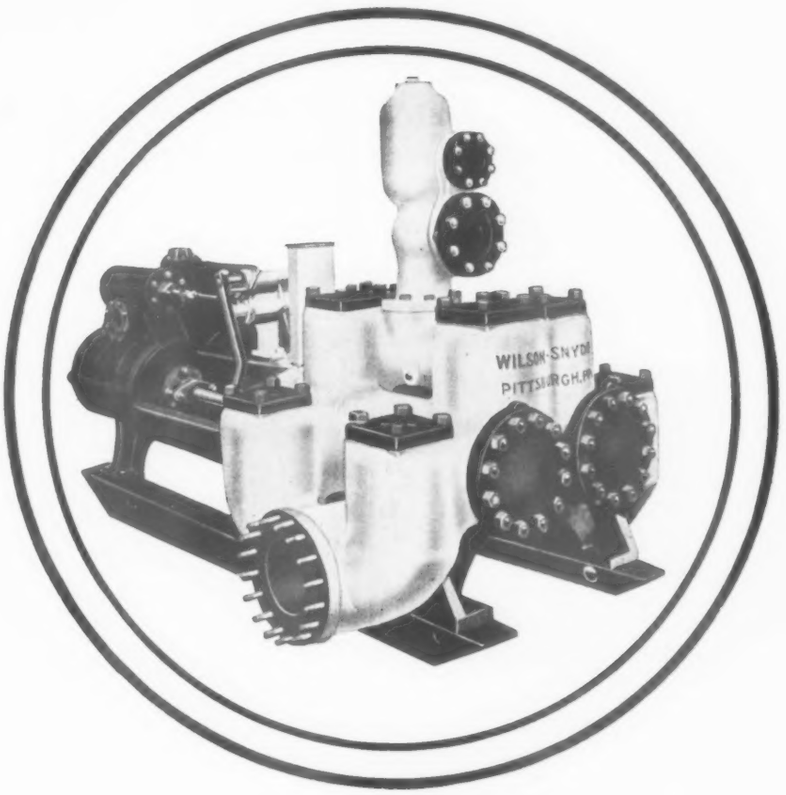
"Stable-Arc"

LINCOLN WELDER

W-155

The CENTER of ACTIVITY

Wilson-Snyder—Power Slush Pumps "Side Suction"



Size 14" x 7¼" x 18"

On I. T. I. O. Coppinger No. 3, in the Oklahoma City Field, Two Wilson-Snyder Pumps are being used. With the exception of thirty hours running time the well has been drilled to a depth of 6100 feet, by ONE Pump, with no repairs needed.

The Wilson-Snyder No. 18 is a heavy duty side suction slush pump, tested to 3000 pounds pressure. With the 10 inch suction opening, the fluid cylinders are completely filled at each stroke, this feature is very important where high steam pressure is used.

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MURRAY TOOL & SUPPLY COMPANY
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"For every joint on every line"

The world's greatest oil and gas companies would not connect thousands of miles of high pressure pipe lines with Victaulic Couplings—unless their engineers knew that, anchored or unanchored, the Victaulic Coupling assures high tensile strength and freedom from line losses for the life of the pipe.

• • •

Available for steel, wrought iron, cast iron and spiral weld pipe—all sizes from ¾" up—for all working pressures. See Sweet's Page 451. Mail the coupon below.

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

"For every joint on every line"

FLEXIBLE LEAK-PROOF

VICTAULIC

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For uses, installations, specifications and prices, fill in and mail this coupon.

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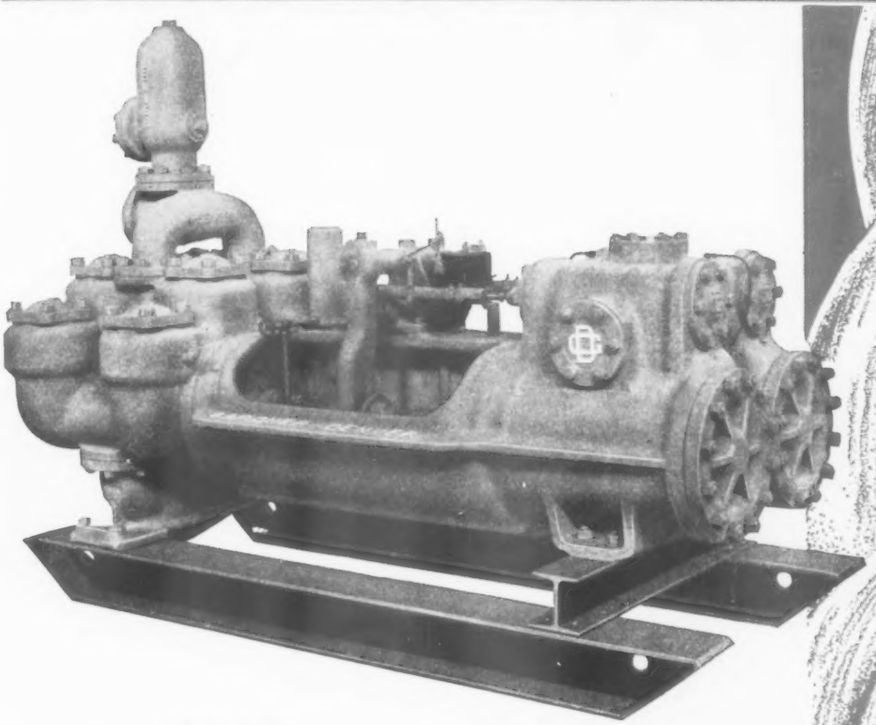
SLUSH PUMPS

A SIZE FOR EVERY SERVICE



STEAM	POWER
12 x 6¾ x 12	6¾ x 12
14 x 6¾ x 12	6¾ x 14
12 x 6¾ x 14	7¼ x 14
14 x 7¼ x 14	7¼ x 16
14¼ x 7¼ x 20	7¼ x 20

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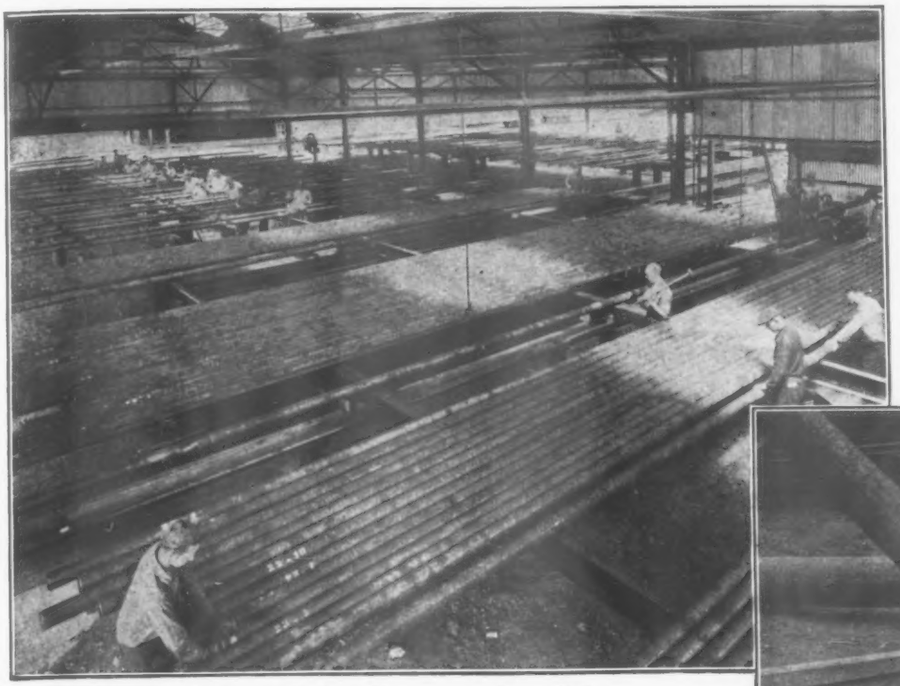

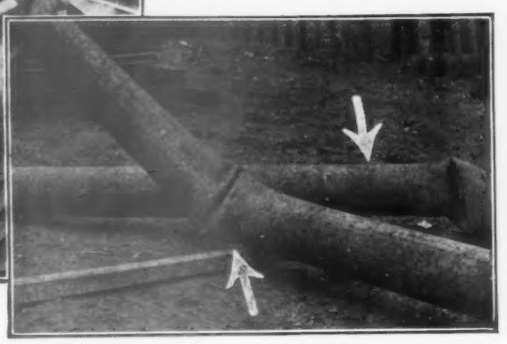

At left—One of the buildings devoted to the welding of double length line pipe, 44 to 50 ft. long.

Chester Double Lengths Never Leak and Never Break Under Severest Tests

These pieces welded in double lengths were subjected to the following extreme tests:

The pieces were dropped several times from height of railroad car upon a rail. These tests in no way fractured or injured the weld.

The pieces were then anchored near the gas weld and a chain attached to a locomotive was secured near the end of the pipe. The locomotive pulled on the pipe distorting it as shown in the photograph near weld as indicated by arrow. The weld remained intact and gave no indication of failure.

No double length pipe can be stronger than Chester Double Length Pipe. The field test of the long 10-inch line from which these pieces were selected at random did not develop a single leak in the weld.

The careful inspection, crushing tests and final hydrostatic test after welding into double lengths insure 100% satisfaction in service.

Chester also makes all classes of genuine Wrought Iron Tubular Goods.

South Chester Tube Company
Chester, Pa.

District Sales Managers:

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Great Northern Tool & Supply Co.,
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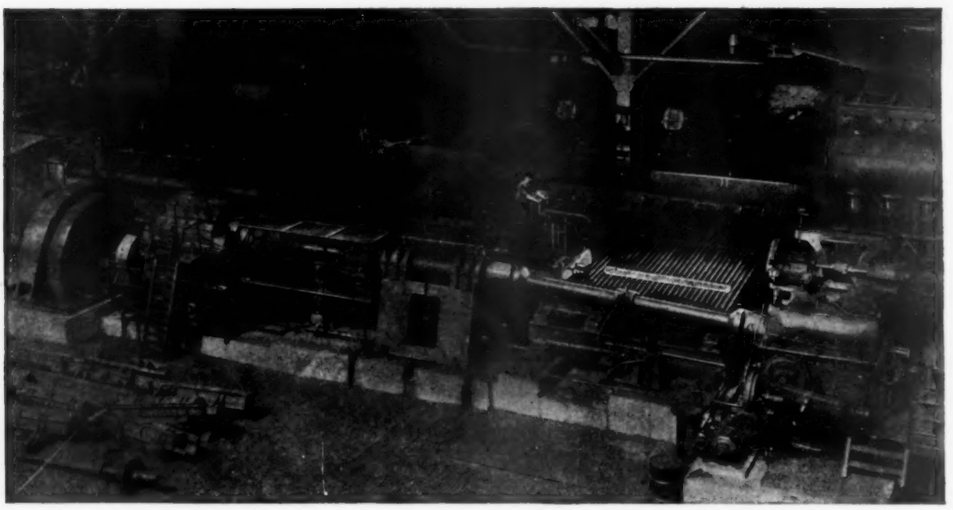
CHESTER

SPECIALISTS IN CASING FOR DEEP WELL DRILLING

STEEL CASING

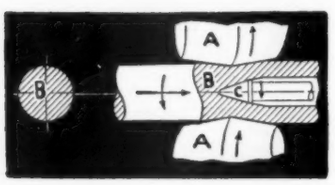
LINE PIPE



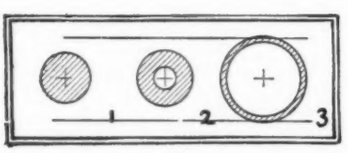
Pictured above is the first piercer in the J & L No. 2 Seamless Tube Mill at the Aliquippa, Pa., Works. One of the solid round billets, white hot, from which J & L Seamless Pipe is made, may be seen rolling down the skids, to enter the machinery in the right foreground, to be converted into tubular form. Compare the size of this powerful machinery with the operator, at his controls, in the center of the picture.

Right from the Start

J & L Strives for Seamless of Uniform Wall Thickness

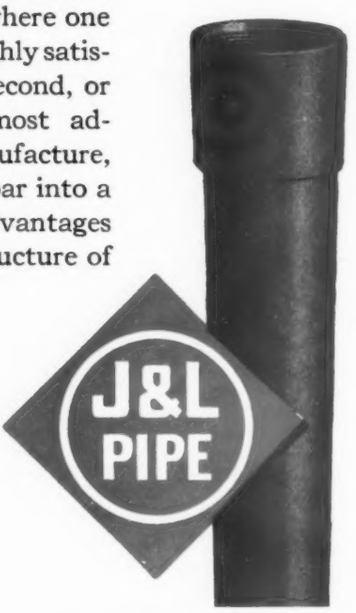


Sketch shows in cut-a-way view, the operation of the first piercer. The rolls, "A," carry the solid round billet, "B," over the piercing point, "C."



Development of cross section in the manufacture of J & L Seamless: 1. Before piercing; 2. After first piercing; 3. After second piercing.

IN producing all sizes of Seamless Pipe, except the smaller tubing where one piercing operation is thoroughly satisfactory, J & L employs also a second, or expanding, piercer. By this most advanced method of seamless manufacture, J & L converts the solid round bar into a tube gradually and easily. Advantages are, absence of strains in the structure of the steel and production of a tube of relatively uniform wall thickness right at the start. Together, these results make for uniform strength and dependability in the finished J & L Seamless when it goes into service in the field.



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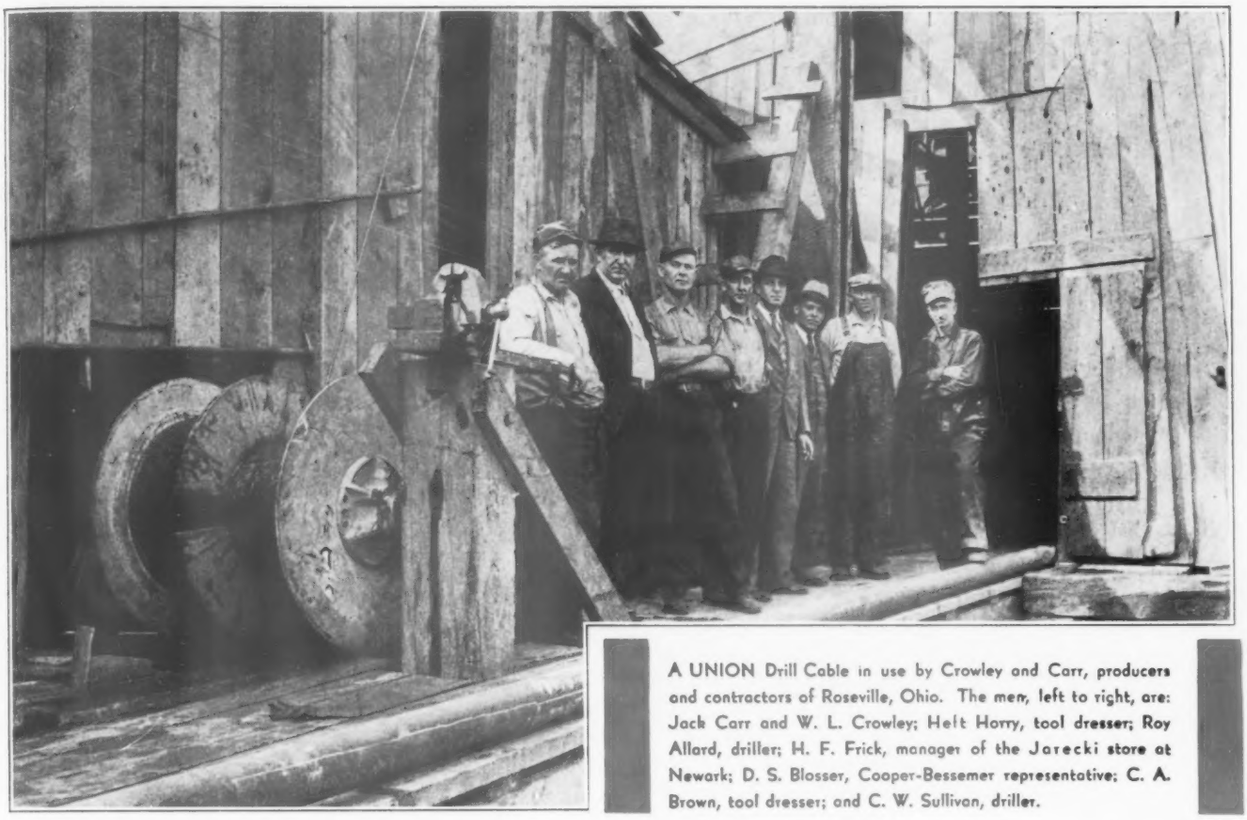
AMERICAN IRON AND STEEL WORKS

J&L STEEL

Manufacturers of Seamless and Welded Casing, Tubing, Drill Pipe and Line Pipe, and Welded Steam, Gas and Water Pipe in both Black and Galvanized.

Also makers of Bars, Shapes and Plates, Reinforcing Bars, Cold Finished Steel, Junior Beams, Steel Piling, Fabricated Structural Work, Steel Barges, Wire Products and Tin Mill Products.

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA



A UNION Drill Cable in use by Crowley and Carr, producers and contractors of Roseville, Ohio. The men, left to right, are: Jack Carr and W. L. Crowley; Helt Horry, tool dresser; Roy Allard, driller; H. F. Frick, manager of the Jarecki store at Newark; D. S. Blosser, Cooper-Bessemer representative; C. A. Brown, tool dresser; and C. W. Sullivan, driller.

UNION ENDURANCE makes friends at Roseville, Ohio

This UNION Drilling Cable was used by Crowley and Carr to drill the largest producer in the Roseville Field to 3550 feet, and is shown on a direct offset to that well. Ohio, Texas or South America are all the same to UNION oil industry Wire Lines - - - they feel at home and do their stuff in any oil country. Correct design, plus precision manufacture, gives UNION Wire Lines the outstanding endurance which makes fast friends of users.

UNION WIRE ROPE CORPORATION

3 North Madison Ave., Tulsa, Oklahoma

Oil Country Sales and Export Offices: 338 Kennedy Bldg., Tulsa

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TRADE MARK

UNION WIRE LINES

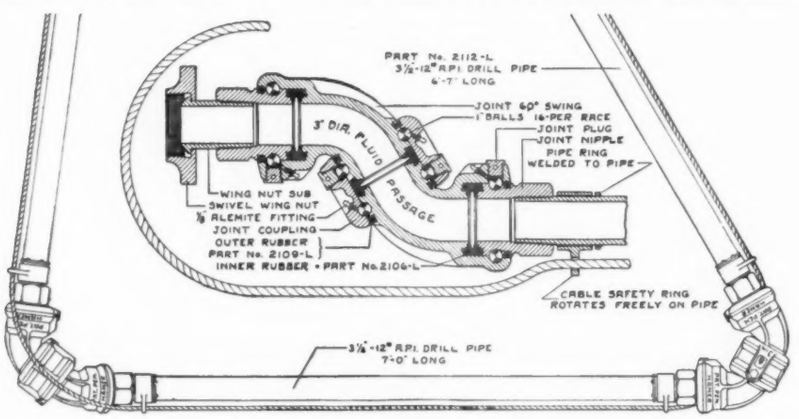
A FACTOR IN PROFITS

PROVEN equipment pays dividends to its users — in speed of operation, safety, continuous service, fewer shut-downs and replacements.

THE new HAMER ALL STEEL ROTARY HOSE, with SEVEN JOINTS, is designed for use from the *grass roots down.* It is extremely flexible due to the use of seven ball bearing joints, each with a fluid channel larger than the pipe, providing an unobstructed flow of the fluid at any pressure and any weight of mud, this large channel reduces the cutting action of sand to a minimum.

The HAMER STEEL HOSE now in use are veterans of many wells and to date no user has ever paid *one cent for service.*

SECTIONAL VIEW OF THE HAMER ALL STEEL ROTARY HOSE



Put on a Hamer All Steel Hose when starting your next well.

THIS NEW STEEL HOSE is on sale at all Iverson Tool Company's stores at, *Oklahoma City, Okla., Hobbs, New Mexico,* Tulsa and Okmulgee, Okla., Artesia, New Mexico, Borger, Iraan and Wink, Texas.

IVERSON TOOL CO.

SUBSIDIARY

IVERSON SPECIALTY CO.

TULSA, OKLAHOMA

Unlimited Strength!

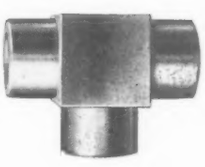
BUILT FOR PRESSURES GREATER THAN ANY YET ENCOUNTERED IN ANY FIELD

ALCO High Pressure FITTINGS

Alco all male steel cross; forged steel construction; precision machined and trued.

Alco 4-way forged steel tee; tested to 10,000 lbs. pressure; safe and efficient

Alco combination flow bean cage; bean can be changed without shutting off the well.



Alco tee; made with the same degree of accuracy as all Alco forged steel fittings.

Alco ell; Tried and tested in hundreds of practical field applications with success.

Tested to ten thousand pounds! Think what that means—5 tons—a dead-weight load that would require a powerful engine to move. Think of the extraordinary strength material must possess to withstand the shock of such tremendous pressure applied to a single square inch!

ALCO 10,000 LB. FORGED STEEL FITTINGS have that strength—strength fully three times greater than required for any pressure yet encountered in any oil field—strength providing margins of service and safety far beyond actual needs.

ALCO 10,000 LB. FORGED STEEL FITTINGS are clearly indicated for use in all cases in which oil or gas control fittings are expected to restrain extreme pressures and resist severe sand abrasion as well.

Lathe finished and thoroughly inspected to insure uniform quality and workmanship.

Special descriptive circular containing specifications and prices mailed upon request to our nearest branch.

Alco OIL TOOL CO. Inc.

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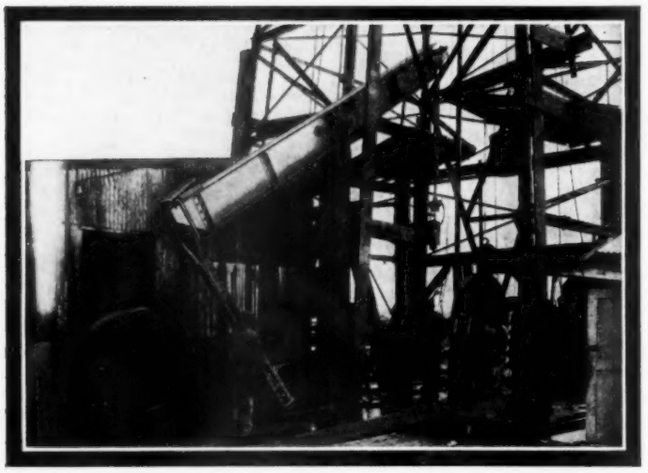


This new PARKERSBURG

TYPE HB. PITMAN

Boomer Type
Just lift the lever for Quick and Easy Removal from Wrist Pin

Patented

Self Aligning Bearing

Adjustable for Wear

Sizes for all standard wrist pins.
Weight, complete 485 lbs.

Saves time *and fingers*

OFF and on in 39 seconds, easily . . . that's why everyone likes this sturdy new Parkersburg Pitman. Its greater convenience saves time and fingers.

That simple boomer lever on the side lifts the Bearing Cap wide open. It makes the job easy and safe. The self-aligning, self-lubricating Bearing of this Pitman will save $99\frac{44}{100}\%$ of your wrist pin troubles.

Don't overlook the construction. The Steel "H" Beam Stem is reinforced on the bearing end—strong enough for any service and, like other Parkersburg Products, it's built to outlast the well.

You will want this new economical Pitman on your next Rig. See the nearest Parkersburg Representative today, or write for prices.

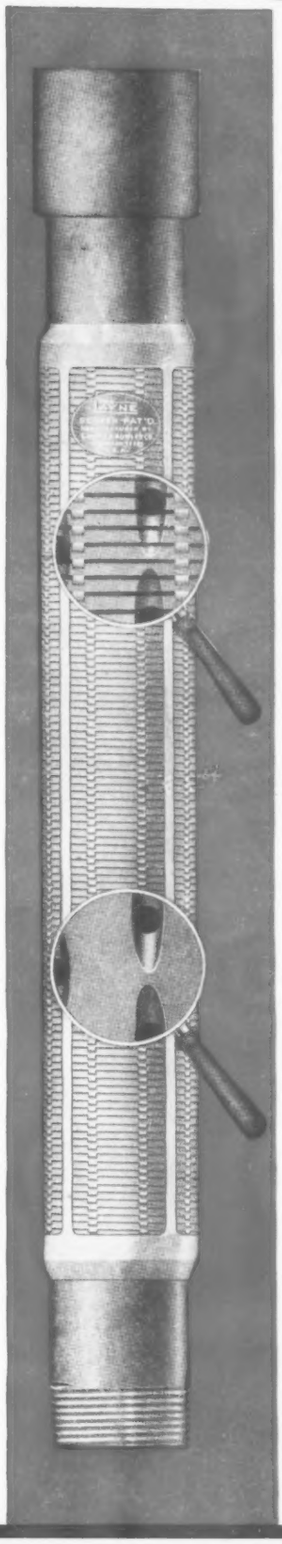
The Parkersburg RIG and REEL Co.

Parkersburg, W. Va. and Branches

THE PARKERSBURG RIG AND REEL CO. — PARKERSBURG WEST VIRGINIA — QUALITY SERVICE — MADE IN U.S.A.

TRADE MARK REG.

A HOLE



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THE LAYNE MILLED GROOVE SCREEN

A famous hole—the *Layne Milled Groove*—in a screen which increases production from 33-1/3% to 100%.

That's why the "greater production" *Layne Milled Groove Screen* was a sensational success at its inception, and that's why, today, this exclusive screen is used by leading companies abroad and in this country.

The *Layne Milled Groove Screen's* ability is remarkable, having the strength to safely stand 8,000 feet of drill pipe. It prevents sand cutting, is a tonic to low pressure wells, and does not clog with mud and sand.

Install the "greater production" *Layne Milled Groove Screen* instead of wishing you had.

Write, wire or phone for quick service, prices or catalogue.

The Layne & Bowler Co.

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Install Milled Groove Instead of Wishing You Had

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A QUARTER CENTURY OF DEVELOPMENT AND EXPERIENCE

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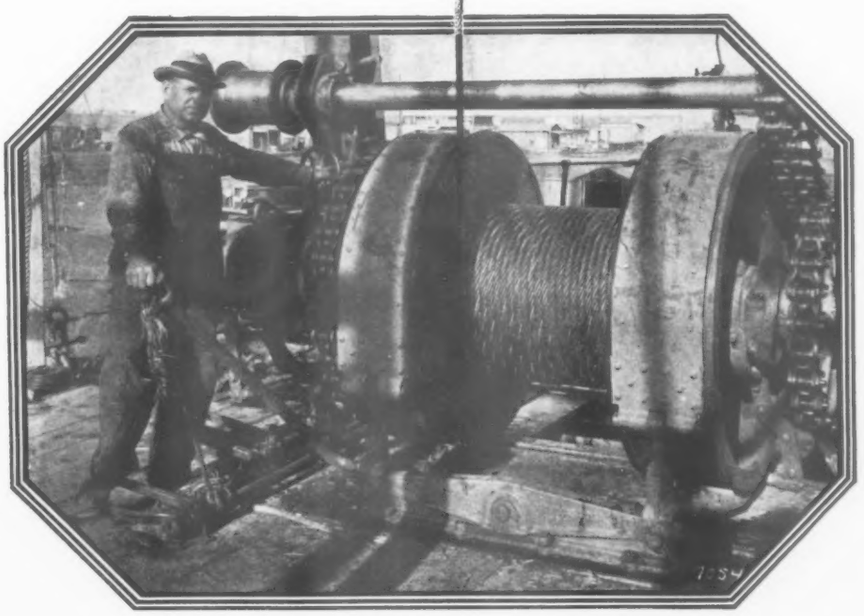
Good drillers can *get along* with any kind of a line, but a poor line is a handicap and should have no place on such important operations.

There's no economy in using a poor line. Most drillers know this.

The fact that Williamsport has such outstanding preference in the oil fields should be a good reason for your insistence on their use on *your* job.

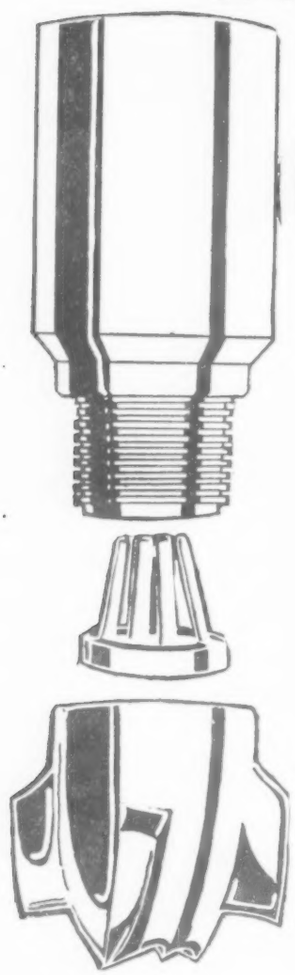
You'll find them the easiest running, the most sturdy and satisfactory lines you've ever used.

Try one—send to us for our booklet.



Nothing tells the story like an ELLIOTT Core

Elliott cores range from 1¾ inches to 6 inches in diameter, and up to 30 feet in length.



Elliott cores are long, unbroken, uncontaminated samples of the various formations drilled—authentic pictures of lower strata in their natural state—records which can be relied upon as an infallible guide for investing capital in deepening wells and developing new areas.

Since the very beginning of coring practice, Elliott has pioneered every forward step in the coring of oil wells, and Elliott Core Drills, today—in oil fields throughout the entire world—are recovering informative cores which frequently turn an unsuccessful investment into one of real value.

Send for the Elliott Catalogue which contains complete information. State whether you are interested in rotary or cable tool drilling.

The Elliott Rotary Core Drill

Elliott
CORE DRILLING COMPANY
4731 East 52nd Drive
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Export Offices: 150 Broadway, New York

ELLIOTT Core Drills

When better Core-Barrels are designed . . . . .

Perfection

will be their name!

Type "M" Bit Body

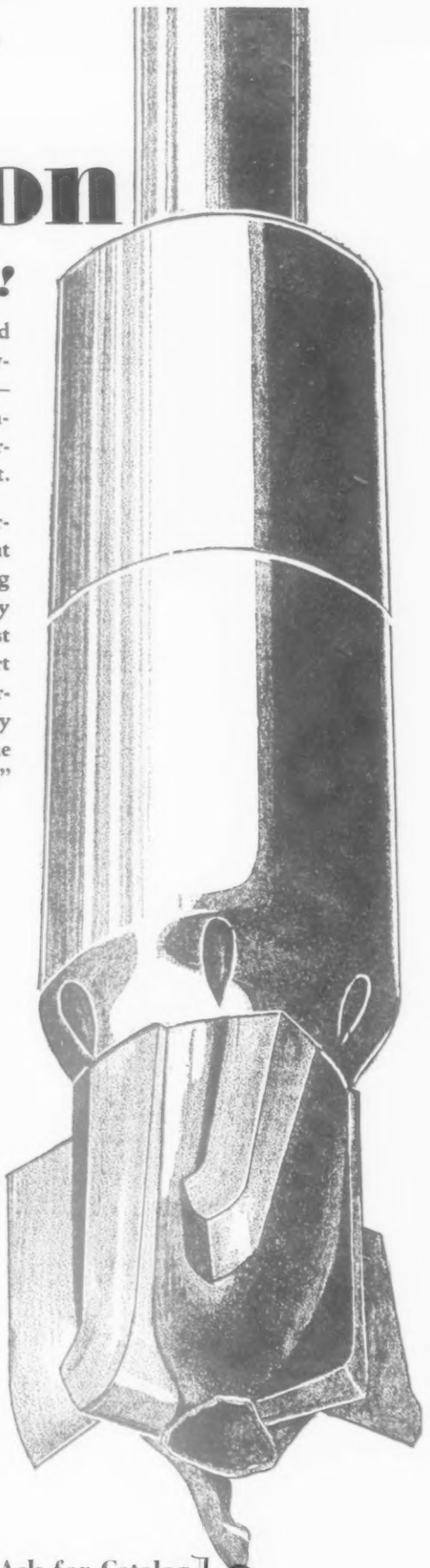
Constant advances in design, backed by precision manufacture in finely-tooled, splendidly manned shops—that is why 9 out of every 10 contractors give the Perfection Core Barrel the same unqualified endorsement.

The latest is the Type "M" Perfection Core Barrel—designed to put circulation directly on the cutting edge. The result is an efficiently cooled bit that makes hole fast through hard formations. Convert your Type "C" Perfection Core Barrels by replacing Type "C" Bit Body with Type "M". We will furnish the latter free to owners of Type "C" barrel.

Type "M" Cutter Head

Ask . . . *about these other Brewster A.P.I. Products.*

Include A. P. I. Shouldered Tool Joints; Perfection Core Barrels; Chrome Nickel Drill Collars; Special Fish Tail and Gumbo Bits; Core Barrel Cutter Heads for both hard and soft formations — hard formation cutter heads are faced with a substance of diamond-like hardness.



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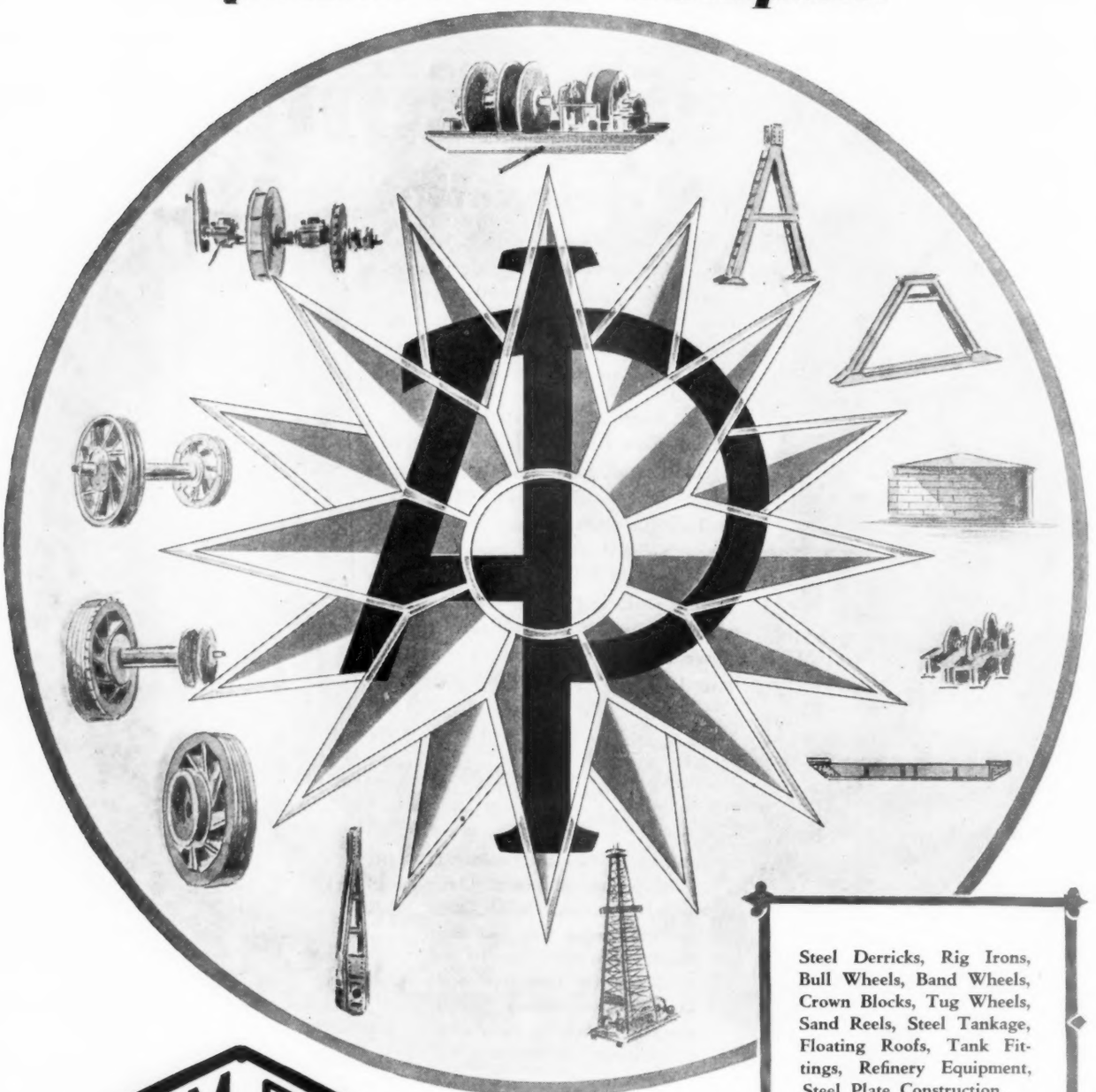

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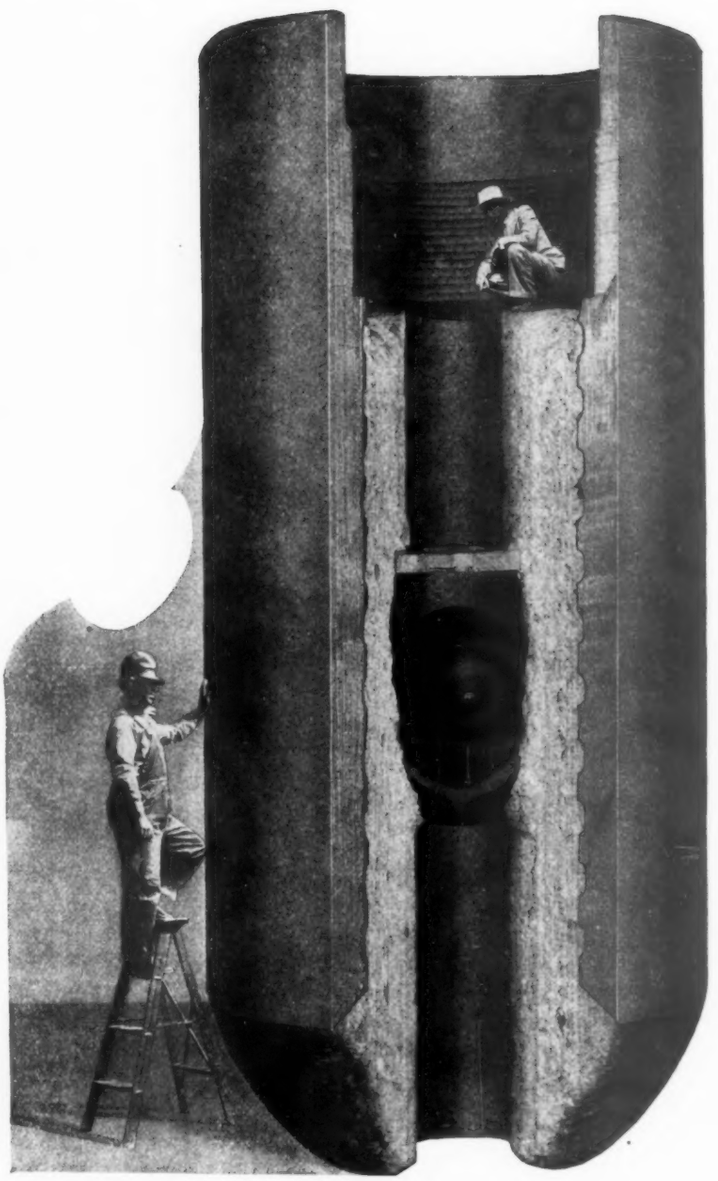

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SPENCER W. ROBINSON, EDITOR

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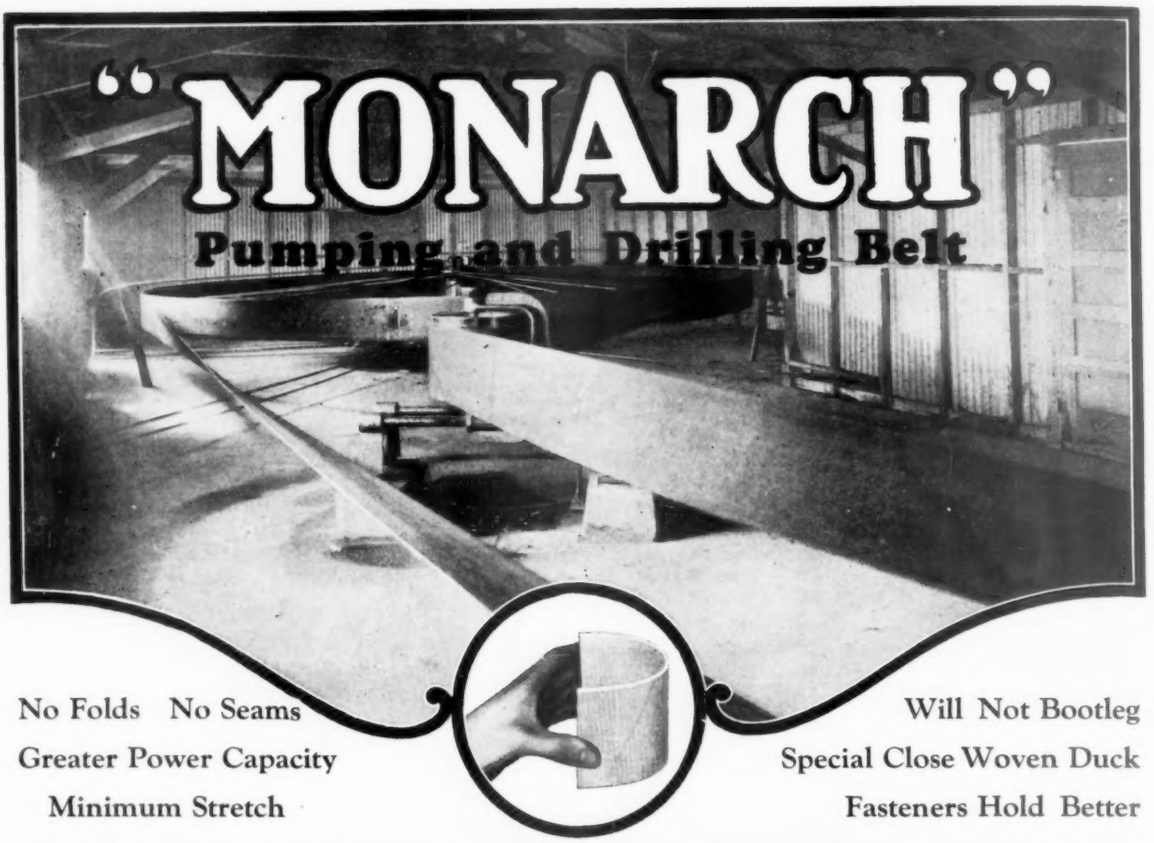

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THE OIL WEEKLY

VOLUME 58, NO. 13 SEPTEMBER 12, 1930

August Drilling Reflects General Curtailment

By H. J. STRUTH
Staff Economist

WELL completions in the United States during August registered a material decline, the total for all states outside of the Rocky Mountain area amounting to only 1837 wells, compared with 2144 wells in July. Despite this decline, initial oil production showed a sharp gain over July, the total for August being 1,160,055 barrels against 845,068 barrels in the preceding month. This sharp gain in new oil production was practically all due to the bringing in of numerous unusually large wells at Oklahoma City, where initial oil production jumped from 399,328 barrels in July to 739,529 barrels in August. Analysis of field operations by producing sections of the United States for August shows, however, that the trend of new development is unmistakably lower and seems to offer reasonable assurance that a majority within the industry have determined upon a policy of rigid curtailment.

Although the quantity of new oil production obtained during August was materially larger, total crude production for the month was nearly 1,600,000 barrels lower than in July. Preliminary data, based upon daily average production reported by the American Petroleum Institute shows that the total output of crude during August was approximately 76,664,000 barrels, against 78,230,000 barrels in July. This indicates that the daily average for August was about 2,472,000 barrels, against 2,523,000 barrels in July, a net decline of about 51,000 barrels a day. Oklahoma, Kansas and Texas, three of the leading producing states, played an important part in the curtailment movement during August. Production in California showed practically no change over July while North Louisiana and the Rocky Mountain states recorded slight gains in output during August.

Oklahoma well completions during August amounted to 335, of which 199 were oil producers. This represents a decline of 22 completions and 10 producing wells for the month. However, the 199 producing wells completed in Oklahoma were credited with a total new oil production of 823,853 barrels, while during the month of July 210 producers completed resulted in the production of only 504,371 barrels of new oil production. Oklahoma City proved to be the all-important development, not only in Oklahoma but for the United States. In contrast with the enormous production of new oil at Oklahoma City, it can be pointed out that Texas, with the completion of nearly twice as many wells during August, only reported the production of 245,890 barrels of new oil. Other important developments in Oklahoma included a decline in well completions and new oil production in the Seminole area and the bringing in of a 25,000 barrel well in Cleveland County. More wells were drilled in Pottawatomie County during August, but the quantity of new oil production obtained showed practically no change over July.

Kansas Production Off

Kansas completed more wells during August but there were fewer producing wells and new oil production declined from 20,019 barrels in July to only 14,770 barrels in August. McPherson and Greenwood Counties reported fewer well completions and smaller new production, while Sedgwick and Butler Counties reported more well completions and a material gain in new oil production.

North Louisiana and Arkansas reported only slight changes during August. There were more wells completed in North Louisiana during August, but new oil production showed only a slight gain over July, while in Arkansas the number of well completions was practically the same as in July, and new oil production was slightly lower. An increase in wildcat operations in North Louisiana during August resulted in a gain in new oil production from that source. Wildcat wells completed in

UNITED STATES PRODUCTION

Following is the gross production in the United States (in barrels of 42 gallons) during the month of July, as compiled from daily averages reported by the American Petroleum Institute. There are differences between the figures shown below and those contained in detailed tables appearing elsewhere in this issue. The figures below are the result of calculating A. P. I. estimates for the representative fields.

State—	Daily Average Production August*	July	Total Production August*
Oklahoma	560,100	594,750	17,363,500
Kansas	115,700	121,600	3,586,700
Texas (outside Gulf Coast)	648,300	652,350	20,096,850
North Louisiana	41,450	40,550	1,285,750
Arkansas	55,150	55,400	1,709,700
Eastern States	128,600	137,200	3,986,200
Rocky Mountains	105,900	98,350	3,282,800
California	611,150	610,450	18,946,100
Total	2,473,000	2,520,050	76,664,350

*Preliminary—Subject to revision.

Arkansas during August showed a slight decline but new oil obtained showed a gain. In the Louisiana Gulf Coast, there were more wells completed during August, but the number of producers brought in was unchanged from the July record. East Hackberry reported the completion of two producing wells during the month with a total initial production of 4000 barrels, against only 1800 barrels in July.

There was a material decline in the number of wells completed in Texas during August, when only 608 wells were completed against 750 in July. While the number of producing wells completed in Texas was smaller than in July, the quantity of new oil production obtained was only slightly less than the quantity produced in July. This was due to the completion of unusually large wells in the Van Zandt field, where 18 or 19 wells completed were oil producers having a total initial yield of 100,620 barrels.

North Texas reported a material decline in number of well completions in August, the total amounting to only 83 wells against 139 in July. This resulted in reducing the initial output from 4415 barrels in July to only 1904 barrels in August. Both Wichita and Archer Counties figured prominently in this decline. Texas Panhandle well completions were somewhat smaller than during July but initial oil production was sharply higher. During August 36 producing wells completed in this area contributed 27,545 barrels of new oil production, against 17,515 barrels from 73 wells in July. Gray County furnished the bulk of this gain in new oil production when 27,385 barrels was reported as the initial output from 33 producing wells completed. In July, this county also reported the completion of 33 producing wells, but initial production was only 14,300 barrels.

West Texas New Production Off

West Texas reported a sharp decline in new oil production during August, the total amounting to only 35,842 barrels against 75,587 barrels in July. Pecos County completed 12 producing wells during August, one more than in July, but initial oil production registered a decline from 55,114 barrels in July to 21,781 barrels in August. Although 20 wildcat wells were completed during August, only two of these were producing wells, having a total initial production of 75 barrels. Southwest Texas, particularly the Chapman and Zapata areas reported a material gain in well completions during August and a consequent increase in new oil production. Reports from Chapman, Williamson County, Zapata and Darst Creek show that these districts contributed a combined total of 73 new wells and a total initial oil production of about 27,000 barrels. This compares with the completion during July of 41 wells in this area and a total initial oil production of only slightly more than 7000 barrels. Van Zandt, in East Central Texas, completed 19 wells in August with an initial output of 100,620 barrels, against 22 wells in July and an initial production total of 85,000 barrels. West Central Texas operations resulted in the completion of 137 new wells and a total initial oil production of 3259 barrels. This compares with 230 well completions in July and 17,528 barrels of new oil production. Young County was mainly responsible for this share of decline in well completions and initial oil production.

Texas Gulf Coast reported a material gain in new oil production during August. Humble and Pierce Junction reported gains in well completions and initial oil production while Barbers Hill reported a decline in both well completions and initial oil production. The total number of wells completed in the Texas Gulf Coast during August was slightly lower than in July, 131 against 136, but the quantity of new oil production in this area increased from 27,199 barrels in July to 47,598 barrels in August. Reports from a number of Texas Gulf Coast fields indicate plainly that settled production there is undergoing a rapid decline, with the result that even though initial oil production from new wells is larger, the net result is a slight decline in total output for each month. The fact that operators in several of the newer fields of the Gulf Coast have agreed to limit new drilling offers reason to believe that the daily average production of this area will shortly prescribe an accelerated decline that will necessitate eventual increased development to furnish the demand for this type of oil.

See Page 99 for Detail Figures

UNITED STATES FIELD STATISTICS

Following are the completions, showing oil wells, gas wells, failures and initial production of crude oil and gas by states for the month of August, as compiled by THE OIL WEEKLY:

State—	Completions	Producers	Gas wells	Failures	Initial Production Oil	Gas*
Arkansas	24	8	2	14	720	1¼
California	85	74	..	11	50,795	...
Illinois	22	9	..	13	214	...
Indiana	18	3	6	9	67	9½
Kansas	105	33	29	42	14,770	148½
Kentucky	127	74	21	32	3,130	16¼
Louisiana	132	39	32	61	16,799	662¼
Michigan	15	7	2	6	1,440	9
Mississippi	13	..	6	7	.....	123½
New York	8	8	..	..	20	...
Ohio	163	55	65	43	1,920	49¼
Oklahoma	335	199	38	98	823,853	738¾
Pennsylvania	96	86	16	14	336	9¾
Texas	608	337	48	223	245,890	970
West Virginia	86	18	45	23	101	33
Total	1,837	930	310	597	1,160,055	2,771

*Millions of cubic feet.

PAST TWELVE MONTHS

The record for the past 12 months is an interesting study for comparative purposes, the following table giving the field statistics for all states:

Month—	Completions	Producers	Gas Wells	Failures	Initial Prod.
July, 1929	1,725	986	226	513	420,033
August	2,552	1,507	337	708	541,720
September	2,169	1,310	234	624	448,283
October	2,447	1,414	301	732	433,990
November	1,965	1,139	283	543	442,170
December	1,791	978	275	538	433,264
January, 1930	1,918	1,142	296	480	685,325
February	1,463	881	201	381	990,896
March	1,544	794	220	530	665,535
April	1,702	1,023	180	499	776,024
May	1,973	1,125	228	611	771,977
June	1,679	950	223	506	580,997
July	2,144	1,167	306	671	845,068
August	1,837	930	310	597	1,160,055

Note—Rocky Mountain data omitted.

Refiners Continue Extensions And Betterments

By GEORGE REID
*Associate Editor, The Refiner and Natural Gasoline Manufacturer**

REPORTS covering the past 30-day period are indicative of continued expansion in the petroleum refining industry, for 10 new plants were announced or proposed in August. This new work if carried to completion will add 40,000 barrels crude oil capacity to the industry's total by next spring. Reports indicate a slackening in construction of natural gasoline plants during the past 60 days.

Pure Oil Company has announced construction of a 6000-barrel plant at Toledo, Ohio, which is to be equipped with Gyro vapor phase cracking units. In the same state Independent Producers Refining Company has been incorporated and will erect a refinery at Logan of 2000 barrels capacity, equipped with Dubbs cracking units. Among the proposed plants is that reported in the press for General Petroleum Corporation on its 300-acre site at Torrance, California, and a plant for Cosden Oil Company to be leased or possibly built on the Eastern Seaboard. Also, in California, Mohawk Petroleum Company is building a 4000-barrel skimming plant near the new Playa del Rey field close to Venice.

Texas Pacific Coal & Oil Company is buying materials for a proposed refinery of 3000 barrels capacity at Temple, Texas. At Corpus Christi the Houston Oil Company has started operating a small single-still plant, while reports state plans are being made for the large permanent plant at this point. Continental Oil Company is reported proposing a refinery at Billings, Montana. D. M. Crump Refineries, Inc., is building a 2500-barrel skimming plant in the south part of the Oklahoma City field. Black Gold Refining Company has started operating its recently completed plant in this field, and reports state that Altitude Petroleum Company contemplates the erection of a 2000-barrel refinery there.

Several companys are enlarging refining facilities. White Oak Refining Company at Allen, Oklahoma, is adding a new lubricating oil department which will soon be in operation. Sunray Oil Company, also operating plant at Allen, Oklahoma, is doubling crude capacity through the installation of new tube stills. Peveto & Peacock Refining Company, Oklahoma City, in addition to moving plant equipment in from Kansas, have erected a new tube still unit. In Pennsylvania, Crew-Levick Company (Cities Service), has completed erection of its combination crude and re-run units, thus doubling the capacity of this plant and greatly increasing production of its lubricants. Union Oil Company's Wilmington, California, plant is adding another unit of the Edeleanu sulfur dioxide treating process, as is Humble Oil & Refining Company at its Baytown, Texas, plant. Four other Edeleanu units are being installed at various foreign refineries.

Vacuum Oil Company, after experimental operation of the Pratt vapor phase units at the St. Louis refinery of Lubrite Refining Company, is adding two additional vapor phase units of this type. Englargement of the Paragon refinery at Toledo, Ohio, by Gulf Refining Company is to consist of the installation of two 9000-barrel tube stills, thus trebling capacity at this plant. In Texas, Olney Refining Company, recently purchased by Reece Allen and associates, is reconditioning and enlarging capacity through the addition of another tube still unit.

White Star Refining Company, operating refineries at Trenton, Michigan, and Wood River, Illinois, has been acquired by Vacuum Oil Company, and it is rumored that Bartles-Maguire-Waghams Oil Company deal is progressing toward culmination soon. The often mentioned merger of Phillips Petroleum Company and Independent Oil & Gas Company was announced last month with plans for no change in personnel or headquarters of either company. Cities Service Company is negotiating for the acquisition of Louisiana Oil Refining Corporation with refineries at Shreveport, Louisiana, but definite announcement of completion of merger have not been announced. Deer Oil Corporation has been organized to take over Luling and Brownwood, Texas, refineries formerly operated by Central Texas Refining Company.

Pure Oil Company is nearing completion of construction of its Van field, Texas, compression type natural gasoline plant, equipment for which was mostly dismantled in Oklahoma plants and moved to Van. Development of the field points to the necessity of a second natural gasoline plant for this field outside of the unitized area. Del Rey Oil & Refining Company has started operating its new natural gasoline plant near Venice, California.

Refineries discontinuing operation during the last month consist of MacMillan Petroleum Corporation's El Dorado plant, shut down upon completion of the company's new refinery at Norphelt, Arkansas, and the three refineries formerly listed as Transcontinental, which are now called Mid-Kansas Oil & Gas Company, and now a subsidiary of Ohio Oil Company. The Fort Worth plant was scheduled for early resumption of operation. The Boynton and Bristow, Oklahoma, plant will be inoperative for longer periods, during which time they are to be reconditioned. Peerless Oil & Refining Company at Chanute, Kansas, was shut down, and Empire Oil & Refining Company announced shutting down its Cushing, Oklahoma, refinery for an indefinite period.

*A Gulf Publishing Company Publication.

Physical and Chemical Characteristics of Oil Sands

By W. F. CLOUD
Associate Professor of Petroleum Engineering, University of Oklahoma

THE term "oil sand" has been ambiguously applied to all types of rocks which serve as natural reservoirs for oil and gas. The term originated in Pennsylvania where the oil reservoir rocks in the first wells drilled in America for oil were sandstones. These sandstones, after being finely pulverized by the drill bit, appeared to the drillers as oily sand grains, so the name "oil sand" was readily adopted. A majority of the practical field men and operators use the term when speaking of reservoir rocks that contain crude oil, whether they are sandstones, limestones, dolomites, or some other porous formation.

Classification of Reservoir Rocks

Oil sands or reservoir rocks may be conveniently grouped or classified as follows:

I. Sandstones and sandstone conglomerates.
II. Dolomitic and jointed limestones.
III. Water-channeled limestones.
IV. Fissured shales and sandy shales.
V. Volcanic rocks.
VI. Crystalline rocks.

Approximately 80 or 85 per cent of all commercial production has been derived from sandstones and sandstone conglomerates or modifications of them. For example, in Oklahoma alone there are about 45 producnig horizons, of which all but four are sands or sandstones.

On the other hand, in several noteworthy areas much oil has been produced from dolomitic and water-channelled limestone. As examples, the following fields may be mentioned: The Tampico region of Mexico, the Lima-Indiana field, the dolomitic limestone cap rocks associated with the salt domes of the Gulf Coast region, the Embar limestone of Wyoming, the Annona (Austin) chalk of Louisiana and Texas, the Greenbrier limestone in Pennsylvania and West Virginia, and the Oologah (Big), Fort Scott (Oswego), Mississippi, and the Siliceous (Arbuckle) limestones of Oklahoma.

While fissured shales have produced oil in only a few localities, sandy shales and calcareous shales (marls) have served as reservoirs for oil in many fields, being usually more or less associated with typical sandstone reservoirs.

Volcanic rocks, such as, tuffs, ash, breccia, and vesicular basalt, have produced some oil in remote regions. At Thrall, in Williamson County, Texas, some gusher wells produced from a soft vesicular tuff included in the Taylor marl. What little oil has been produced in Japan came from sands and volcanic tuffs.

Metamorphic and crystalline rocks have served as reservoirs in Cuba, where the oil is encountered in a fractured serpentine; at Santa Clara, California; at Lytton Springs, Texas; and in the "granite wash" area of the Texas Panhandle.

In concluding it may be said that any kind of rock may be a reservoir for oil and gas if it has the voids, cracks, and crevices into which the oil may migrate, provided it will be "trapped" therein and retained by an impervious cover (cap) rock.

ORIGIN AND COMPOSITION OF RESERVOIR ROCKS

Sandstones

The disintegration or breaking-down of a rock is usually accompanied or followed by a removal of the fragments from the original location. This transportation may be done by flowing streams, glaciers, or winds, and is accompanied to a certain extent by a sorting or separation of the rock residues into different substances. Streams or winds deposit their loads first as coarse gravel, then as sand, and finally as silt or clay. The gravels consist of the more or less rounded fragments of the original rock or of its components. The sands contain finer particles of the unaltered minerals of which quartz is the most common. The silts are largely decomposed or altered kaolin, iron oxides, and aluminum hydroxide. Quartz and feldspar are the most common minerals in original rocks, therefore they are the principal constituents of stream sands.

After being transported, the application of pressure accompanied by heat and the addition of cementing materials, will cause these products of rock decomposition to become reconsolidated, the sands becoming sandstones and the clays and silts becoming shale or sandy shale.

Chemically sand differs from sandstone principally in the addition of a cementing material, which is supplied by solution of the moist surfaces in contact with each other or by percolating waters. Such substances as barium and calcium sulphate, silica, iron oxides, hydroxides of aluminum, and calcium carbonate often serve as cementing material in sandstones. Silica is probably the most common cementing material found in standstones, with the carbonates, especially calcium carbonate ranking next. The following analysis[1] of a typical sandstone illustrates the kind and nature of cementing materials which are most common:

		Per Cent
Soluble part	$CaCO_3$	39.50
	$MgCO_3$	7.23
	$FeCO_3$	7.54
	$Ca_3P_2O_8$	3.90
	Fe_2O_3	.82
	Al_2O_3	2.12
Insoluble part	SiO_2	36.65
	Al_2O_3	.91

A sandstone, while it is usually predominately quartz, as is exemplified in the Simpson (Wilcox) sand of Oklahoma, may contain appreciable amounts of feldspar and

mica. When a mixture of quartz and clay (aluminum silicate) is reconsolidated into a rock the result is a sandy shale or an argillaceous sandstone, depending upon the relative amounts of the two ingredients present.

Analyses of typical sandstones often reveal the following substances or minerals to be present: clay, dust, iron carbonate, augite, garnet, calcium carbonate, tourmaline, magnesium carbonate, hornblende, mica, apatite, feldspar and quartz. The following summary of anlyses of 253 common sandstones and 371 analyses of sandstones used for building purposes, as analyzed by H. N. Stokes[2] for the United States Geological Survey, shows the general composition of this class of rocks:

	A	B
Silica	78.6	84.8
Titanium oxide	.25	.41
Aluminum oxide	4.8	5.9
Hematite (ferric iron)	1.08	1.4
Iron oxide (ferrous)	.30	.84
Manganese oxide	Trace	Trace
Calcium oxide	5.5	1.05
Strontium oxide	Trace	None
Barium oxide	.05	.01
Magnesium oxide	1.2	.52
Sodium oxide	.45	.76
Potassium oxide	1.3	1.2
Water—uncombined	.31	.27
Water—combined	1.3	1.5
Phosphorus oxide	.08	.06
Carbon dioxide	5.04	1.01

A—Composite analysis of 253 sandstones.

B—Composite analysis of 371 sandstones used for building purposes.

Limestone

Limestones consist largely of calcium carbonate. They are known by a variety of names, depending upon the amount of other chemicals and impurities present. For example, when a considerable amount of clay is present we have an argillaceous limestone; whereas, when sand is a part of the mixture, the term siliceous limestone is used. Crystalline limestones are known as marble; and crystalline forms of the mineral calcium carbonate, which is the principal constituent of limestones, is known as calcite. Sandy, dolomitic, phosphatic, and bituminous limestones are also common. Chalk and travertine are still other forms of limestone.

Limestones owe their origin to the decomposition of igneous rocks by percolating waters. When waters carrying large amounts of calcium carbonate in solution are permitted to evaporate, they deposit the carbonates and other minerals present in the form of "crusts", which later become hardened into rock. The color and texture may vary considerably, due to such impurities as mud, clay, iron oxide, etc. Also, if fresh water streams that carry large amounts of calcium carbonate, enter the sea, calcium carbonate is often deposited if the temperature of the sea water is suitable to expel the carbon dioxide. This usually occurs in the shallow waters on the continental shelf, and will therefore be more or less affected by the amount of living organisms present. It is thought that the presence of certain bacteria and plant organisms materially influence this type of calcium carbonate deposition.

The origin of limestone from the decay and disintegration of living corals is quite common. After these animals die their shells, which are largely calcium carbonate, are broken by wave action then redeposited and recemented, finally becoming soft limestone rock. Such rocks from shells and corals usually have a coarse structure and portray angular fragments of organic remains. After long periods of submergence under later deposited sediments, accompanied by heat and pressure, most of the evidence of shell remains may be obliterated, leaving usually a hard crystalline limestone.

Such hard limestones are not suitable reservoirs for the accumulation of oil and gas, however. They must be then uplifted above the sea which usually causes folding, faulting, and fracturing to develop. The strata are then in a position for percolating waters to dissolve out fissures and channels along the fractures into which petroleum may migrate as the geologic periods of time pass. In addition to this, subsequent conditions of submergence must be such as to have deposited the bituminous source beds in close proximity to the reservoir limestones.

The following analyses made by the United States Geological Survey[3] portray the chemical content of the average limestone:

	A	B
Silica	5.27	5.19
Titanium oxide	None	.06
Aluminum oxide	1.07	.81
Hematite	.71	.54
Iron oxide (ferrous)	.32	.54
Manganese oxide	None	.05
Calcium oxide	50.36	42.61
Magnesium oxide	.56	7.90
Potassium oxide	.10	.33
Sodium oxide	.20	.05
Lithium oxide	None	Trace
Water—uncombined	.78	.21
Water—combined	.78	.56
Phosphorus oxide	.06	.04
Carbon dioxide	40.34	41.58
Sulphur	None	.09
Sulphur trioxide	.07	.05
Chlorine	None	.02

A—Limestone from Silverdale, Kansas.

B—Composite analysis of 345 limestones taken at random.

Dolomite

The term dolomite is commonly used in referring to limestones that contain appreciable yet variable amounts of magnesium. However, its use should be restricted to the double carbonate (Ca Mg CO_3), which occurs in the crystalline and amorphous state, and should contain approximately 45 per cent magnesium.

Dolomite may be formed in several ways. It may exist as a truly unaltered chemical sediment, in which state it is rarely found. Also, it is believed that certain algae precipitate mixed carbonates which later are altered by replacement to dolomite. By leaching of the more soluble carbonates after deposition these deposits become more enriched in magnesium until true dolomite is formed. This leaching may be done by the atmosphere, the sea water, or percolating water. It is quite evident that most forms of marine shell organisms contribute more or less to the formation of dolomite, since the carbonates contained in the shells or skeletons of marine invertebrates are quite readily decomposed. As a rule, the older limestones contain more magnesium than do those of more recent geologic age.

This chemical transition that occurs to form dolomite from limestone is known as "dolomitization." It is accompanied by a shrinkage of the parent rock which makes it more porous, and therefore in many instances contains

[2]U. S. G. S. Bulletin No. 770, page 545.
[2]Stokes, H. N., U. S. G. S. Bulletin No. 770, page 547.
[3]U. S. G. S. Bulletin No. 770, page 564.

voids enough for the migration and accumulation of oil and gas.

The following analyses[4] are typical of magnesian limestones (dolomite):

	A	B	C
Silica	3.24	None	
Aluminum oxide	.17	.54	
Hematite (ferric iron)	.17	.11	
Iron oxide (ferrous)	.06	None	
Manganese oxide	None	.20	
Magnesium oxide	20.84	18.03	21.9
Calcium oxide	29.58	27.49	30.4
Sodium oxide	None	None	
Potassium oxide	None	None	
Water—uncombined	.30	.61	
Water—combined	.30	.61	
Carbon dioxide	45.54	41.40	47.7
Phosphorus oxide	None	.03	

A—Knox dolomite, Morrisville, Alabama.
B—Niobrara dolomite, Denver Basin, Colorado.
C—Theoretical composition of ideally pure dolomite.

Shale

Shale consists of the finer sediments which have been pressed and consolidated into a close-grained rock of more or less laminated structure. They may vary in chemical composition, depending upon the chemical materials of which they are composed, and may be sandy or calcareous enough to resemble the fine-grained sandstones or impure limestones. However, true shales are supposed to contain only consolidated mud and clay (aluminum silicate) and organic matter. The color of shale may vary from light gray through yellow and red to blue and black, depending upon the nature of the dissolved chemicals and organic matter present. Bituminous and carbonaceous shales are usually dark blue or black.

There is a marked textural and structural difference between shales and sandstones. The latter are composed of grains and are porous, and are permeable to percolating waters; whereas, shales are composed of much finer particles which are closely packed, making the rock impervious except where fractures and fissures develop after the hardening process. Cementation is not an important factor in the formation of shale, as is the case in sandstone, because the muds and clays are bound together by pressure alone, accompanied possibly by some heat. Most shales are dry as compared to sandstones, since there is very little pore space, and the pressure during their formation usually expels most of the water from the muds.

Since shales are usually quite impervious to liquids, it is only within those which have been fractured and fissured that commercial deposits of oil have been found. However, the many so-called "oil shales" offer attractive opportunity for the extraction of petroleum by retorting when the demand presents itself.[5]

The writer quotes the following analyses of shales as made in the laboratory of the United States Geological survey:[6]

	A	B	C	D
Silica	60.15	55.43	51.03	41.32
Titanium oxide	.76	.46	None	.48
Aluminum oxide	16.45	13.84	13.47	20.71
Hematite (ferric)	4.04	4.00	8.06	2.59
Iron oxide (ferrous)	2.90	1.74	None	5.46
Manganese oxide	Trace	Trace	None	.17
Calcium oxide	1.41	5.96	.28	9.91
Barium oxide	.04	.06	None	None
Magnesium oxide	2.32	2.67	1.15	1.91
Sodium oxide	1.01	1.80	.41	7.19
Potassium oxide	3.60	2.67	3.16	.88
Lithium oxide	Trace	Trace	None	None
Water—uncombined	.89	2.11	.81	None
Wate—combined	3.82	3.45	.81	8.78
Phosphorous oxide	.15	.20	.31	.08
Carbon dioxide	1.46	4.62	None	.55
Sulphur trioxide	.58	.78	None	None
Sulphur	None	None	7.29	None
Carbon	.88	.69	13.11	None

A—Composite analysis of 51 Paleozoic shales.
B—Composite analysis of 27 Mesozoic and Cenozoic shales.
C—Bituminous shale, Dry Gap, Georgia.
D—Carboniferous shale, Elliott County, Kentucky.

[4]U. S. G. S. Bulletin No. 591, page 225.
[5]Supply and Demand—Published by the American Petroleum Institute, 1925.
[6]U. S. G. S. Bulletin No. 770, page 552.

PHYSICAL PROPERTIES AND CHARACTERISTICS BROKEN AND GRADATIONAL RESERVOIRS

Sandstones often grade into limestones and shales, and conversely limestones often grade into shales and sandy limestones. This gradation is not only common in chemical composition, but in order of deposition as well. Remarkable variation in coarseness, thickness, character of sediment, and degree of sorting often occur both laterally and vertically over short distances. Alternate beds of sandstone and thin limes and shales are often called broken sands.

Although the principal reservoir rocks consist of sands, grits, limestones, conglomerates, and sandstones the intervening clays, shales and marls are frequently saturated with crude oil. The cracks, crevices, and parted laminae which occur near sharp folds often contain oil in more or less uneven degrees of saturation. The per cent of recovery of oil from such reservoirs, however, is usually low.

Geologists and careful operators never fail to appreciate the importance of lenticular and lateral variation in reservoir rocks. A thin or fine-grained sand may develop into a thick coarse-grained body from one well to the next. However, lateral variation is not restricted to texture of sand grains or to thickness of strata, because large areas of oil sand may be rendered valueless as a result of being sealed or cemented by iron oxide, lime, or some other form of cementing material deposited locally in excessive quantities.

Joint Plane and Bedding Plane Seals

Joints that have developed in reservoir rocks after deposition sometimes become sealed later by some sort of secondary deposition or replacement from percolating waters until some parts of the sand between certain wells will not contain oil in paying quantities and yet be highly productive on both sides of this dry area, although the porosity and texture of the entire sand body may be practically the same.

Sealing along the bedding planes within an oil sand may cause different pressures and degrees of saturation to exist at various depths within the same sand series. Conditions of this nature may greatly affect the amount and quality of oil obtainable from a well, depending upon the depth to which it is drilled into such strata. It may also cause much loss and trapping of oil when the migration of edge water is more rapid along one strata than along others.

Relation of Texture and Bedding to Production

Oil accumulation, as well as oil recovery, depends directly upon deep-seated movements of oil, gas, and water, and is consequently governed largely by the conditions of texture and bedding within the reservoir rock. Marked variation in the texture and bedding of the reservoir will cause corresponding variations in fluid movement.

The movement of oil and water through sand is generally in the direction of least resistance, which is usually toward the well bore or the more open-textured parts of the strata. Fluids tend to move parallel to rather than across bedding planes. Cross-bedding and overlap in oil sands

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Hobbs Proving "Shoe-string" Type Oil Field

By H. H. KING
Staff Representative

HOBBS, New Mexico. — Conclusive evidence that the Hobbs field will adhere to its earlier indications of being a long narrow oil and gas area of the "shoe-string" type was given by developments during the past week. Many operators have held out for a wide bulge in the oil area in the north half of the field, but such a condition now appears impossible, and continuation of a sizeable drilling program is dependent upon important extensions being made to the northwest. Drilling activity at Hobbs is due for a rapid decline during the next two weeks, as there are 10 tests in process of completion in the 4200-foot lime horizon; 15 others drilling below the 3900-foot level; and 19 additional tests drilling between the 2750-foot casing point and the 3900-foot level. These tests account for 44 of the 64 active operations credited to the field early this week. There were four derricks and rigs, and six locations, making a total of 74 operations.

See Pages 44-45 for Detail Field Operations

Hobbs field is now producing oil in a northwest to southeast direction for a distance of about 5½ miles, with an average width of slightly more than one mile. This area has 46 separate 40-acre units on production, with 54 wells rated at a combined daily potential flow of 415,535 barrels, according to official proration figures compiled by Umpire C. G. Staley on September 1. The field is to be allowed to produce 33,935 barrels daily during the September 1-15 proration period.

Week-end completions on the east and west flanks of the field practically dispelled all possibilities of the oil area spreading out, and the poor showing made by some of these tests cast doubt as to successful completions being made from others drilling further away from the "high." Amerada Petroleum Corporation's State 1-B, Section 29, failed to encounter the usual flush production on the east side of the ridge, and made only 74 barrels oil per hour when given open flow test after drilling to 4207 feet. This well is making about 1,500,000 cubic feet of gas with the oil, and cleaned itself of drilling fluid in short order.

North End Widened

Tidal Oil Company's Hardin 1, widened the north end of the field a short distance to the east when placed on production on the morning of September 9 with hole bottomed at 4205 feet. No production estimate has been made, as the well has not cleaned itself of drilling fluid, but promises to be less than an average size producer. The well is being allowed to clean itself through tubing, having started off making about 90 per cent fluid, but later in the day was making about 30 per cent cut oil with the flow directed into a specially prepared earthen pit.

The west flank of the field is also showing signs of being a source of light producers, with a corresponding dip in the structure. Gypsy Oil Company's Grimes 5, located in the southwest corner Section 32, made 5785 barrels net oil and seven per cent drilling fluid when tested at 4192 feet. This well showed only about 3,500,000 feet gas with the oil. Two of the offsets to the latter producer are in process of completion.

The Texas Company's McKinley 1 made 240 barrels oil per hour, with an estimated daily flow of 7,000,000 feet gas at 4183 feet. Gypsy Oil Company's Graham 1, which was reported last week as having extended the field to the northwest without setting the oil string or casing, has been cased with seven-inch pipe and deepened to 4225 feet, resulting in an initial flow of 191 barrels oil per hour, flowing through three-inch tubing. The performance of this outpost well now invites further exploration or in the northwest trend.

Shell Petroleum Corporation scored the banner completion for the week when its State 4 gauged 406 barrels per hour wide open with a total depth of 4175 feet. Continental Oil Company's State 2 "A" made an estimated flow of 3000 barrels high gravity oil daily at 3355 feet, but has been killed to drill to the regular lime horizon. This well indicates that worthwhile production is now being purposely passed up in the shallow horizon by operators.

Shell Deepens Well

A heavy sacrifice in potential production was made by Shell Petroleum Corporation in deepening H. D. McKinley 2, which was completed hurriedly at 4165 feet on August 31 to qualify for the September proration period. This well earned an initial production of 17,042 barrels on the preliminary gauge, with a production allowance of 1210 barrels daily for the September 1-15 period. The flow of oil and gas was killed a few

(*Continued on page 86*)

Hobbs Field Proration

Rapid strides made in building up potential production in the Hobbs field, New Mexico, is illustrated by the following table that gives changes made at each proration period:

Periods	No. Wells	No. Units	Unit Average Potential	Prod. Allowed for Acreage	Prod. Allowed for Potential	Total Daily Production
July 10 to 30	26	22	146,501	8,750	26,250	35,000
August 1 to 16	28	24	167,765	8,760	26,250	35,010
August 16 to 31	42	35	287,246	7,910	23,820	32,250
September 1 to 16	54	46	415,535	8,326	25,089	33,935

Status of Operations in Hobbs, New Mexico, Field

Company—	Sur. Elev.	Top Anhydrite	Top Salt	Top Brown Lime	Producing Horizon	Total Depth	Date Comp.	Init'l Prod.	Prod. or Drilling Status
Amerada Petroleum Corporation—									
H. D. McKinley 1	3,662	1,467	1,564	2,825	4,063-4,230	4,230	7- 1-30	8,500	731
H. D. McKinley 2	3,659	1,446	1,615	2,740	4,002-4,208	4,208	7- 5-30	13,000	1,118
H. D. McKinley 3	3,659	1,460	1,580	2,795	....-4,170	4,170	8-13-30	14,000	1,077
H. D. McKinley 4	3,662	1,475	1,595	....	....	2,749	.....	.....	Cem 9⅝ Cas
State 1-A	3,643	1,505	1,660	2,757	4,001-4,160	4,160	8- 8-30	19,200	1,343
State 2-A	3,656	1,529	1,680	....	....	3,380	.....	.....	Drl
State 3-A	....	....	....	....	....	....	.....	.....	Lcn
State 1-B	3,653	1,460	1,680	2,800	....	3,997	.....	.....	Cem 7 Cas
State 2-B	3,655	1,600	1,720	2,803	....-4,207	4,207	9- 6-30	.....	Testing
State 3-B	3,650	....	....	....	....	241	.....	.....	Cem 12½ Cas
State 4-B	....	....	....	....	....	243	.....	.....	Cem 12½ Cas
Atlantic Oil Producing Company—									
State-Bradley 1	3,628	1,495	1,655	2,810	4,242-4,200	4,200	.....	.....	Testing
W. D. Grimes 1	....	....	....	....	....	250	.....	.....	Cem 12½Cas
Bordages et al Hughes 1	3,576	....	1,660	....	....	4,012	4-26-29	Dry	
The California Company—									
State 1	3,651	1,544	1,660	2,767	4,158-4,191	4,191	8-14-30	2,075	307
State 2	3,655	1,531	1,712	....	....	3,885	.....	.....	Drl
State 3	3,652	1,585	1,737	....	....	2,743	.....	.....	Cem 9⅝ Cas
State 4	3,649	....	....	....	....	1,565	.....	.....	Drl
The California Company et al—									
H. D. McKinley 1	3,654	....	....	....	....	1,760	.....	.....	Drl
Continental Oil Company—									
State 1-A	3,645	1,530	1,665	2,784	....	3,949	.....	.....	Cem 7 Cas
State 2-A	3,640	1,595	1,712	2,765	....	3,510	.....	.....	Drl
State 3-A	3,643	1,500	1,625	....	....	3,050	.....	.....	Drl
State 4-A	....	....	....	....	....	....	.....	.....	Lcn
State 1-B	3,629	1,452	1,616	2,760	4,014-	4,085	.....	.....	Drl
State 2-B	3,635	1,420	1,700	....	....	3,800	.....	.....	Drl
State 3-B	3,635	1,525	1,655	2,752	....	2,754	.....	.....	Cem 9⅝ Cas
State 1-C	....	....	....	....	....	....	.....	.....	Lcn
Empire Gas & Fuel Company—									
C. Fowler 1	3,643	1,460	1,594	2,780	4,028-4,175	4,175	7-11-30	12,000	850
C. Fowler 2	3,644	1,460	1,600	2,790	....	4,080	.....	.....	Drl
B. Hardin 1	3,663	1,490	1,630	2,810	....	3,991	.....	.....	Cem 7 Cas
B. Hardin 2	3,668	1,480	1,635	2,818	....	3,605	.....	.....	Drl
Geo. F. Getty Oil Company—									
H. D. McKinley 1	3,654	1,460	1,660	2,765	4,116-4,200	4,200	7- 4-30	11,000	922
H. D. McKinley 2	3,651	1,465	1,655	2,765	4,100-4,202	4,202	7-14-30	20,000	1,404
H. D. McKinley 3	3,656	1,450	1,580	....	....	2,765	.....	.....	SDO
H. D. McKinley 4	3,658	1,475	1,605	2,800	4,130-4,170	4,219	8-14-30	14,060	1,030
H. D. McKinley 5	....	....	....	....	....	....	.....	.....	Lcn
Gypsy Oil Company—									
W. D. Grimes 1	3,642	1,435	1,616	....	4,010-4,160	4,160	7- 4-30	18,000	1,245
W. D. Grimes 2	3,637	1,425	1,585	2,757	3,982-4,152	4,152	8-21-30	19,950	1,386
W. D. Grimes 3	3,634	1,460	1,610	2,763	3,975-4,154	4,154	8-25-30	21,972	1,508
W. D. Grimes 4	3,640	1,510	....	....	....	3,800	.....	.....	Drl
W. D. Grimes 5	3,632	1,495	1,620	....	....-4,192	4,192	.....	.....	Testing
W. D. Grimes 6	....	....	....	....	....	1,450	.....	.....	Drl
W. Graham 1	3,670	1,440	1,680	2,818	4,168-	4,185	.....	.....	Cem 7 Cas
Hobbs-High, Inc.—									
Tatum 1	3,604	1,610	1,850	3,025	....	3,862	.....	.....	Fsh
Humble Oil & Refining Company—									
D. A. Bowers 1	3,657	....	1,592	2,752	4,061-4,106	4,106	1-20-30	8,500	902*
D. A. Bowers 2-A	3,658	1,430	1,650	2,780	4,100-4,208	4,208	8-11-30	8,400	590
D. A. Bowers 3	3,644	1,440	1,589	2,772	4,096-4,202	4,202	8-24-30	13,200	978
D. A. Bowers 4	3,645	1,450	1,605	2,761	....-4,206	4,206	8-24-30	15,350	1,108
D. A. Bowers 5	3,653	1,440	1,600	2,785	....-4,215	4,215	8-31-30	16,000	*
D. A. Bowers 6	3,653	1,438	1,596	....	....	2,750	6-30-30	.....	SDO
D. A. Bowers 7	3,657	1,445	....	....	....	2,750	6-30-30	.....	SDO
D. A. Bowers 8	3,647	1,465	1,596	2,785	....	3,850	.....	.....	Drl
D. A. Bowers 9	3,649	1,460	1,585	2,790	....	3,900	.....	.....	Drl
D. A. Bowers 10	....	1,480	....	....	....	1,600	.....	.....	Drl
State 1-A	....	....	....	....	....	215	.....	.....	Cem 12½ Cas
Humble & Kirby Petroleum Company—									
W. D. Grimes 1	....	....	....	....	....	245	.....	.....	Cem 12½ Cas
Landreth Production Corporation et al—									
State 1-A	3,673	1,680	1,835	3,045	....	4,520	8- 8-30	Dry	W.S. 4,447-4,520
State 1-B	3,6637	1,500	1,630	2,754	4,010-4,179	4,179	8-30-30	2,770	348
State 2-B	3,639	1,520	1,665	....	....	3,830	.....	.....	Drl
Midwest Refining Company—									
E. H. Byers 33	3,612	1,510	1,655	2,800	3,990-4,025	4,025	8- 8-30	21,250	1,464
W. S. Capps 31 (Sec. 3)	3,602	1,540	1,695	2,830	4,065-4,220	4,220	8- 8-29	785	252
L. Leech 24 (Sec. 15)	3,594	1,594	1,690	2,910	4,105-4,165	4,165	9-29-29	950	228
H. D. McKinley 1	....	....	....	....	....	....	.....	.....	Rig
H. D. McKinley 6	....	1,460	1,725	....	....	2,290	.....	.....	Drl
State 3 (Sec. 4)	3,609	1,450	1,625	2,805	4,005-4,175	4,175	8-20-30	2,138	310
State 4 (Sec. 4)	3,612	1,460	1,625	2,807	....	3,976	.....	.....	Cem 7 Cas

Status of Operations in Hobbs, New Mexico, Field

Company—	Sur. Elev.	Top Anhydrite	Top Salt	Top Brown Lime	Producing Horizon	Total Depth	Date Comp.	Init'l Prod.	Production or Drl. Status
State 8 (Sec. 4)	3,625	1,410	1,568	2,772	4,026-4,175	4,175	8-21-30	19,850	1,379
State 26-A (Sec. 4)	3,612	1,520	1,645	2,825	4,300-4,190	4,190	8-15-30	1,555	275
State 26-B (Sec. 4)	3,606	1,457	1,680	2,790	4,024-4,190	4,190	8-31-30	2,203	314
State 26-C (Sec. 4)	....	....	....	....	....	....	.....	.....	Rig
State 33 (Sec. 4)	3,612	1,430	1,568	....	4,018-4,175	4,175	8-28-30	4,536	455
State 1 (Sec. 9)	3,600	1,533	1,690	2,825	4,055-4,220	4,245	12-17-28	700	215
State 8 (Sec. 10)	3,612	1,540	1,690	2,835	4,072-4,200	4,200	8-16-30	1,058	245
State 24 (Sec. 10)	3,586	1,590	1,720	2,910	4,125-4,187	4,187	1- 6-30	650	215*
State 36 (Sec. 10)	3,586	1,580	1,700	2,880	4,130-4,177	4,177	6-12-30	525	*
State 1 (Sec. 15)	3,587	1,590	1,690	2,875	4,135-4,143	4,143	7- 1-30	6,500	314*
State 13 (Sec. 15)	3,597	1,590	1,725	2,905	4,155-4,178	4,178	6-29-30	425	*
O. B. Terry 13	3,586	1,580	1,718	2,860	4,068-4,179	4,179	1-22-30	1,000	234
O. B. Terry 26	3,593	1,588	1,695	2,865	....	2,950	.....	.....	Fsh
Turner 29	....	....	....	....	....	....	.....	.....	Rig
A. L. Wright 6 (Sec. 14)	3,596	1,615	1,770	2,920	....	4,500	2-12-30	Dry	W.S.4,228-4,500
Ohio Oil Company—									
State 1 (Sec. 9)	3,591	....	1,705	2,945	3,998-4,207	4,312	12- 1-29	50	20
State 1 (Sec. 30)	3,655	1,435	1,576	....	4,040-4,205	4,205	7-16-30	10,000	733
State 2 (Sec. 30)	3,653	1,428	....	....	....	3,850	.....	.....	Drl
State 3 (Sec. 30)	....	1,480	1,605	....	....	2,100	.....	.....	Drl
Ohio-Phillips Pet. Co.—									
State-Northrup 1	3,634	....	1,616	2,760	4,000-4,175	4,175	6-26-30	7,500	686
State-Northrup 2	3,633	1,442	1,603	2,765	4,032-4,175	4,175	8-12-30	5,900	537
State-Northrup 3	3,640	1,505	1,664	2,750	4,010-4,175	4,175	8-14-30	13,413	991
State-Northrup 4	3,640	1,470	1,600	2,772	....	3,940	.....	.....	Cem 7 Cas
Prairie Oil & Gas Company—									
Crump 1	3,586	1,575	1,690	2,890	4,139-4,145	4,145	6-20-30	5,000	344*
Crump 2	3,586	1,588	1,690	2,892	4,137-4,172	4,172	6-26-30	1,080	*
W. D. Grimes 1	3,653	1,595	1,750	2,800	....	3,720	.....	.....	Drl
Frank Selman 1	3,595	1,580	1,704	2,897	4,153-4,180	4,180	6-18-30	615	205
Frank Selman 2	....	....	....	....	....	....	.....	.....	Rig
Shell Petroleum Corporation—									
Nora Berry 1	3,635	1,478	1,588	2,800	....	3,995	.....	.....	Cem 7 Cas
W. D. Grimes 1	3,643	1,575	1,719	2,770	....	3,675	.....	.....	Drl
W. D. Grimes 2	3,645	1,560	1,702	....	....	2,751	.....	.....	Cem 9⅝ Cas
H. D. McKinley 1	3,661	1,462	1,580	2,782	4,026-4,210	4,210	6-16-30	12,000	827
H. D. McKinley 2	3,658	1,470	1,620	....	....-4,200	4,200	8-31-30	17,042	1,210
H. D. McKinley 3	....	....	....	....	....	....	.....	.....	Lcn
H. D. McKinley 4	3,659	1,460	1,615	2,810	....	3,975	.....	.....	Cem 7 Cas
H. D. McKinley 5	3,661	1,475	1,635	2,825	....	4,015	.....	.....	Drl
H. D. McKinley 6	3,663	1,480	1,631	2,825	....	3,975	.....	.....	Cem 7 Cas
H. D. McKinley 7	....	1,447	1,645	2,806	....	3,960	.....	.....	Cem 7 Cas
H. D. McKinley 1-B	....	....	....	....	....	1,630	.....	.....	Drl
H. D. McKinley 2-B	....	....	....	....	....	750	.....	.....	Fsh
State 1-A	3,637	1,456	1,615	2,750	3,936-4,175	4,175	6-11-30	7,500	802*
State 2-A	3,642	1,466	1,630	2,755	4,011-4,185	4,185	8-15-30	7,700	*
State 3-A	3,636	1,500	1,616	2,754	4,025-4,185	4,185	8-26-30	1,055	244
State 4-A	3,638	1,450	1,595	....	4,040-4,175	4,175	.....	.....	Testing
State 1-B	....	1,584	1,710	2,770	....	3,230	.....	.....	Drl
O. B. Terry 1	3,595	....	1,726	2947	....	4,238	11-25-29	Dry	W.S.4,235-38
B. L. Thorp 1	3,584	....	1,720	2.890	4,142-4,155	4,170	1-27-30	1,130	245
Skelly Oil Company—									
C. Fowler 1	3,644	1,494	1,697	2,810	....	4,050	.....	.....	Drl
Sun Oil Company—									
H. D. McKinley 1	3,624	1,460	1,616	2,795	....-4,175	4,175	8- 4-30	11,080	850
H. D. McKinley 2	....	....	....	....	....	960	.....	.....	Drl
H. D. McKinley 3	....	....	....	....	....	200	.....	.....	Drl
The Texas Company—									
H. D. McKinley 1	3,608	1,425	1,565	....	4,080-	4,100	.....	.....	Drl
H. D. McKinley 2	3,608	1,398	....	....	....	1,400	.....	.....	Drl
H. D. McKinley 3	3,604	....	....	....	....	100	.....	.....	Drl
Frank Selman 1	3,589	1,600	1,728	2,825	....-4,183	4,183	8-12-30	377	203
State 1-C	3,663	1,465	1,640	2,815	4,119-4,206	4,206	8-12-30	6,390	567
State 2-C	3,661	....	1,605	....	....	2,763	.....	.....	Cem 9⅝ Cas
Texas Pacific Coal & Oil Company—									
State 1-G	3,667	1,474	1,625	2,785	4,140-4,193	4,214	7- 2-30	9,000	745
State 2-G	3,672	1,450	1,625	....	....	3,950	.....	.....	Cem 7 Cas
Tidal Oil Company—									
W. D. Grimes 1	3,651	1,546	1,700	2,730	4,028-4,160	4,160	7- 7-30	24,000	1,479
W. D. Grimes 2	3,656	1,550	1,700	2,765	....	3,880	.....	.....	Cem 7 Cas
W. D. Grimes 3	....	....	....	....	....	1,600	.....	.....	Drl
B. Hardin 1	3,662	1,475	1,770	2,840	4,066-	4,105	.....	.....	Drl
B. Hardin 2	....	....	....	....	....	....	.....	.....	Lcn
Walker Oil Corporation—									
O. B. Terry 1	3,583	....	1,747	2,912	4,073-4,193	4,193	10- 9-29	575	500*
O. B. Terry 2	3,583	1,580	1,695	2,875	4,130-4,190	4,190	6-18-30	525	*
Vacuum Oil Company—									
Nora Berry 1	....	....	....	....	....	....	.....	.....	Lcn

(*)—Indicates two producing wells on 40-acre unit.

Effects of Tubing Flowing Wells Yates Field, Texas

Paper presented before the fall meeting, Southwestern District of the A. P. I. Division of Production, Galveston, Texas, September 4, 1930

By H. H. HARRISON

*In Collaboration with the Yates Field Engineering Committee**

DURING the first three years of the life of the Yates field, the ordinary practice was to allow the wells to flow through the casing, pinched at the surface so that the production might meet the limitations imposed by the voluntary proration restrictions in force.

A few scattered wells of low potential had been tubed in a more or less "hit and miss" manner with the thought of increasing the present production, lengthening the flowing life and preventing the accumulation of water in the hole. To the best of our knowledge no consideration was given to the reduction of gas-oil ratios.

Before any general tubing program was entered upon the average gas-oil ratio for the field was slightly in excess of 450 cubic feet per barrel. This is a very low average, and if every well in the field had approximated it, it is possible that no further effort at gas conservation would have been made. However, there were individual wells and groups of wells which had gas-oil ratios far in excess of the above figure; in some instances as high as 5000 cubic feet per barrel.

It is generally understood that the forces driving the oil from the formation to the surface are hydrostatic head, expanding gas, or a combination of the two. The degree of effectiveness of either depends upon the structural position of, and porosity encountered in, the individual wells. It is desirable to keep the gas production at a minimum, even in cases where water drive lifts the oil, as it will tend to maintain formation pressure at a maximum, preventing premature encroachment of water and the resulting "trapping" of oil between wells.

In the summer of 1929, a series of experiments was carried on by one of the operating companies to determine the relationship of rate of oil flow to gas-oil ratios. In general it was found that increasing the production rate reduced the gas-oil ratio. According to information now available, the type of well fulfilling the conditions just mentioned is most common. However, there are a number of wells in the field in which the gas-oil ratio is constant, or even increased as the rate of flow is increased. Another company found that on one of its leases a very drastic reduction of gas-oil ratios was possible by increasing the rate of flow in a number of wells of the type first mentioned.

Reduce Gas-Oil Ratios

The latter company made the first real attempt to reduce gas-oil ratios. These wells having a high gas-oil ratio at low steady rates of flow were produced intermittently at rates sufficiently high to materially reduce the amount of gas produced with the oil. While flowing steadily at low rates the average ratio for four wells was 2673, but when producing at rates high enough so that the allowable daily production was made in a few hours, the average ratio was brought down to

*D. B. Courville, Gulf Production Co.; P. P. Gregory, Proration Engineer; W. A. Schaeffer, Shell Petroleum Corporation; Dale Nix, The California Co.; C. V. Temple, Humble Oil & Refining Co., in collaboration with H. C. Hardison.

SUMMARY OF RESULTS OF TUBING REPRESENTATIVE WELLS
YATES FIELD—TEXAS
All Wells

Company—	No. Wells	Before Tubing: Oil Bbl. Per Day	Before Tubing: Average Cu. Ft./Bbl. Ratio	Before Tubing: Gas M. Cu. Ft. Per Day	After Tubing: Oil Bbl. Per Day	After Tubing: Average Cu. Ft./Bbl. Ratio	After Tubing: Gas M. Cu. Ft. Per Day	Per Cent Reduction in the Gas-Oil Ratio
"A"	13	1,759	825	1,448	1,986	542	1,079	34
"B"	5	1,322	908	1,201	1,322	814	995	10
"C"	14	4,570	1,310	5,981	5,091	570	2,891	56
"D"	11	1,784	1,031	1,813	1,784	831	1,461	19
"E"	12	1,402	1,146	1,607	1,711	933	1,596	19
Totals	55	10,837	1,112	12,050	11,894	674	8,022	39
TAPERED TUBING								
"B"	1	480	1,325	636	480	1,325	636	0
"C"	14	4,570	1,310	5,981	5,091	570	2,891	56
"D"	3	520	417	217	520	363	189	13
Totals	18	5,570	1,225	6,834	6,091	610	3,716	50
STRAIGHT TUBING								
"A"	13	1,759	825	1,448	1,986	542	1,079	34
"B"	4	842	671	565	842	426	359	37
"D"	8	1,264	1,263	1,596	1,264	1,007	1,272	20
"E"	12	1,402	1,146	1,607	1,711	933	1,596	19
Totals	55	5,267	990	5,216	5,803	742	4,306	25

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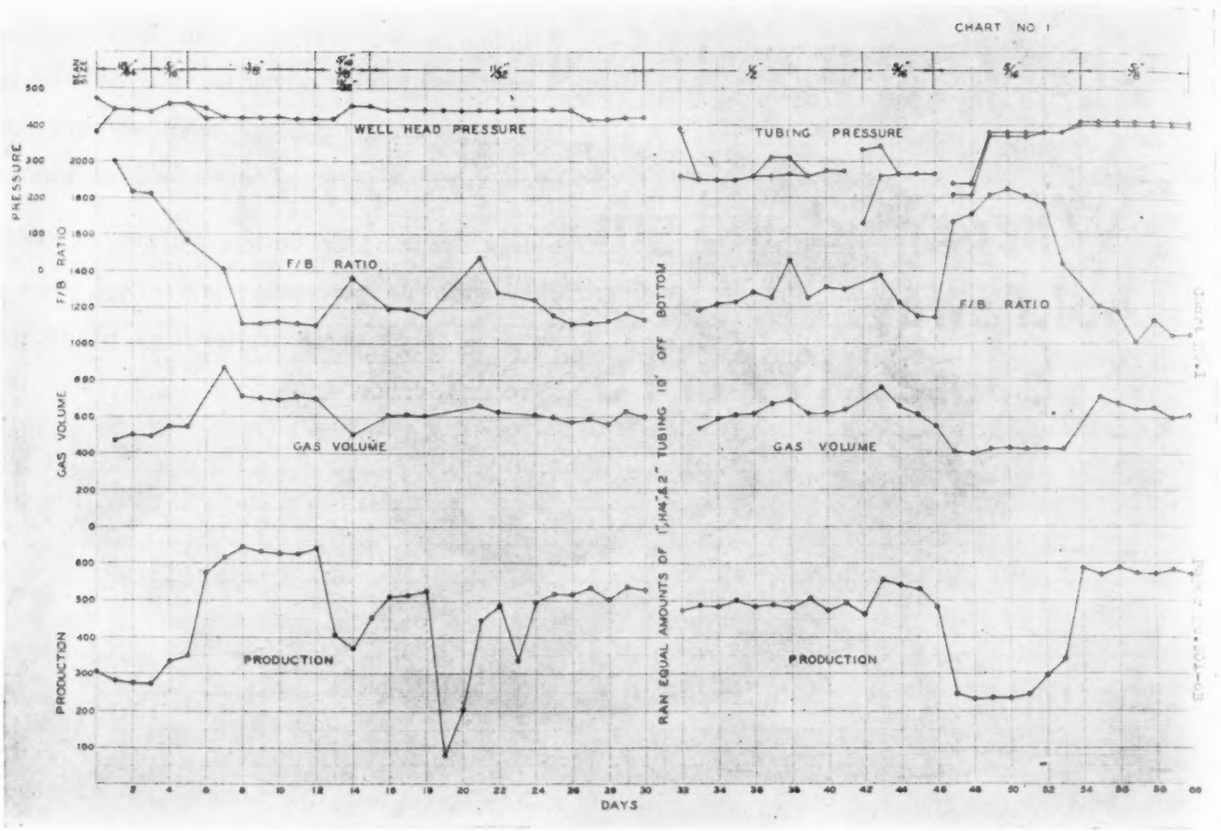

CHART NO. 1

1091 cubic feet to the barrel, a reduction of approximately 60 per cent.

It is very probable that the saving of gas effected by this means was somewhat offset by the sudden release of pressure on the producing horizon in each well as it was opened daily to flow its allotted production. Care was taken while flowing these wells intermittently not to allow the well head pressure to drop below 50 per cent of the closed-in pressure. This is not true "stop-cocking" inasmuch as the term is usually taken to mean that a well is flowed intermittently so that the maximum rate of flow is obtained, which reduces the well head pressure to a minimum. However, any appreciable reduction in the well head pressure allows a corresponding lowering of back pressure on the formation. This eventually might be the cause of uneven encroachment of water and result in the premature cessation of flow in wells in the vicinity of the area of lowered pressure.

The disadvantages of intermittent flow were sufficient to warrant considerable work being done to find some other method of reducing gas-oil ratios.

The problem then arose of finding some means of attaining low ratios at steady, comparatively low rates of flow, which would tend towards even withdrawal of fluid and maintenance of maximum pressure in the productive horizon.

One of the main causes of the high gas-oil ratios obtained in flowing some of the wells through casing at low rates of flow was the separation of gas from the oil in the slowly ascending column of fluid, rising through what was apparently a far from efficient eductor string. The fact that increasing the rate of flow decreased the amount of gas per barrel, is evidence for the above.

Fulfillment of the ideal conditions of low steady rates of flow, low gas-oil ratios and high bottom hole pressures necessitated a reduction in size of the eductor string. This involved the design of a flow string suitable to the individual requirements of the well. The problem confronting the designers of tubing in the Yates field is somewhat unusual. Ordinarily, a theoretically efficient string of tubing may be inserted into a well and the rate of flow adjusted until the results are satisfactory or nearly so. In this field the tubing for a well must be designed for a certain present rate of flow which may at a future time vary upward or downward due to changing outlets or addition of new wells or units. The problem is further complicated by the fact that hydrostatic head plays such an important part in the lifting of the oil. The matter of formation gas lift must of course be given the same consideration in the design as in any other field.

The first string of tubing with the reduction of gas-oil ratios in view was run late in December, 1929. This was a 1386-foot string suspended 53 feet off bottom and consisting of approximately equal lengths of two-inch, three-inch and four-inch tubing, with the largest size on top. The gas-oil ratio at the regular production rate was reduced from 1670 to 558 cubic feet to the barrel.

Seven other wells were then tubed on the same lease with smaller tapered strings, in all cases three sizes being used per well; and even more successful results were obtained. The average gas-oil ratio for this group of eight wells was reduced from 2078 to 288 cubic feet per barrel, for the same rates of flow for the individual wells; 86 per cent reduction.

Recommend Tubing Wells

When possibilities for reduction of gas production by tubing became generally known, a meeting of production men and engineers was held. As a result of this meeting it was recommended that all wells producing more than 400 cubic feet of gas per barrel be tubed in an attempt to reduce gas wastage. It was the sense of the meeting that

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any well flowing through casing with no higher gas-oil ratio than the above was being produced with reasonable efficiency and that in these cases the casing formed a comparatively suitable sized flow string for existing conditions. Representative wells tested for bottom hole pressures show formation pressures of approximately 700 pounds to the square inch. According to the results obtained from laboratory experiments, it is possible to have 146 cubic feet of gas dissolved in the oil at this pressure. Some of the results of tubing have closely approximated this figure.

A company recognizing the low gas-oil ratios obtained with tapered strings, tubed a well with equal lengths of one-inch, one and a quarter-inch and two-inch. There was no reduction in gas-oil ratio at the same rate of flow before and after tubing. The accompanying chart, No. 1, is self-explanatory. This, to a certain extent, determined that graduated strings would not respond the same on different types of wells. A study of the well logs and structural position of the wells was made and it was found that the first mentioned group of eight wells had obtained the greater portion of the gas in the top of the lime and the oil flow from the lower depths. The latter well was entirely different, having obtained the oil and gas in the same horizon. Since it was evident that all wells would not respond to the same type of flow string other companies ran tubing seemingly suitable to the characteristics of their own wells.

The committee has used the data from 55 representative wells in presenting this report. The advantages of tubing wells has been considered to be four-fold. (1) Increasing the production of small wells that did not have enough gas to produce steadily through casing. (2) Increasing back pressure, thus tending to delay water encroachment (3) Removal of water when it first appears, thereby preventing flooding. (4) Gas conservation by reduction of gas-oil ratios insuring the greatest ultimate recovery.

Many wells near the edge of the structure produced at rates of five to 30 barrels per day flowing by heads. Records were obtained on five wells in which one-inch tubing had been run. In four cases the production was raised 100 to 150 per cent and the wells flowed steadily.

One company has 12 edge wells which were tubed with two-inch tubing. The total production before tubing was 1402 barrels per day with a gas-oil ratio of 1146 cubic feet per barrel. After tubing the average production for the first 30 days was 1711 barrels with a gas-oil ratio of 933 cubic feet per barrel.

Another company tubed 13 wells with two-inch tubing for the purpose of reducing gas-oil ratios. The average production of oil per day was the same before and after tubing due to proration. It was found that the average reduction of gas-oil ratios was 34 per cent. The data from one of the representative wells of this group is presented on Chart 2.

The attached tabie shows that in the 55 representative wells, tubing is saving 4,028,000 cubic feet of gas per day. This is a gas saving of approximately 33 per cent by volume while the oil production was increasing 1057 barrels per day. The oil increase is due, in part to raising the production of small wells and in part to the difficulty of regulating the flow of the large wells to the same rate as before tubing.

It is noted that different companies had varying results which is due to either the type of well or the type of tubing placed in the well.

The results as shown on the table would indicate that a great deal of study of individual well conditions is necessary before tubing. The smaller wells have shown a decided increase in oil and decrease in gas-oil ratio and wells of this class are being tubed daily. However the tubing program on wells of large potential is still in an experimental stage by most companies.

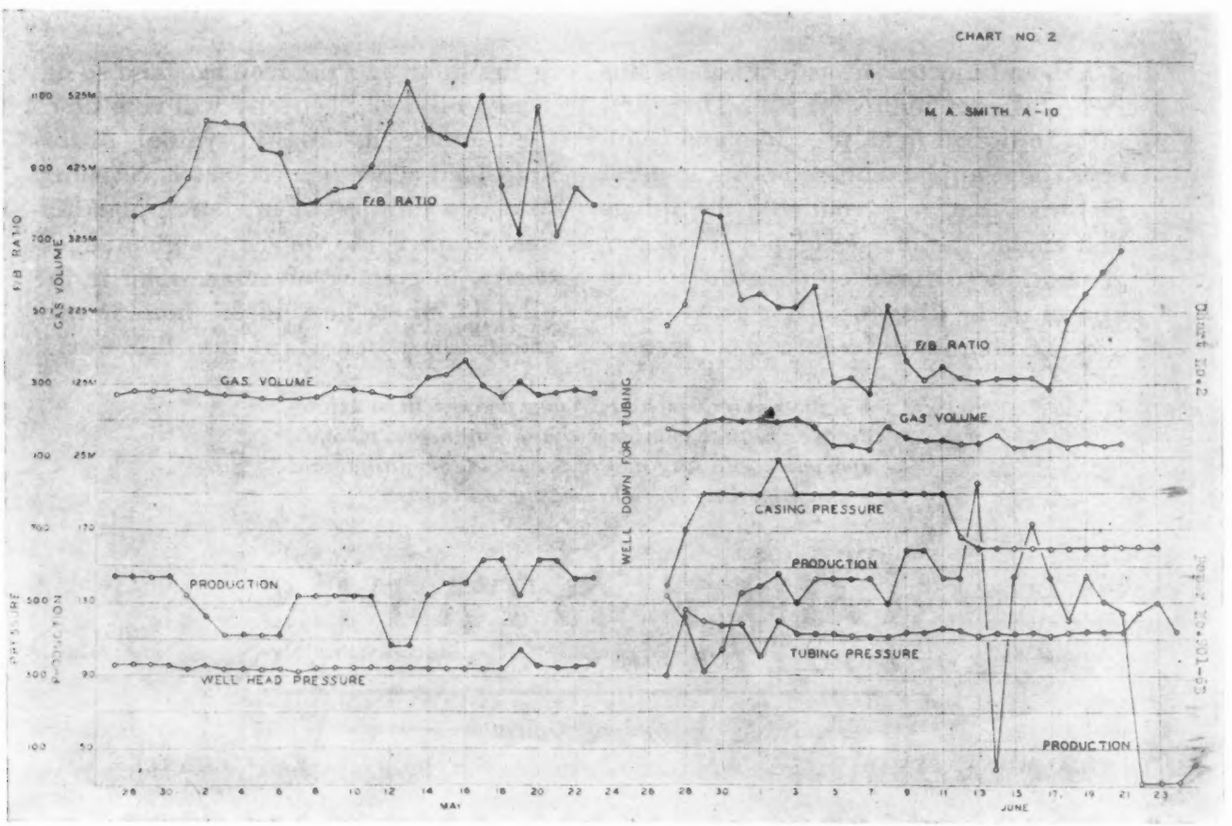
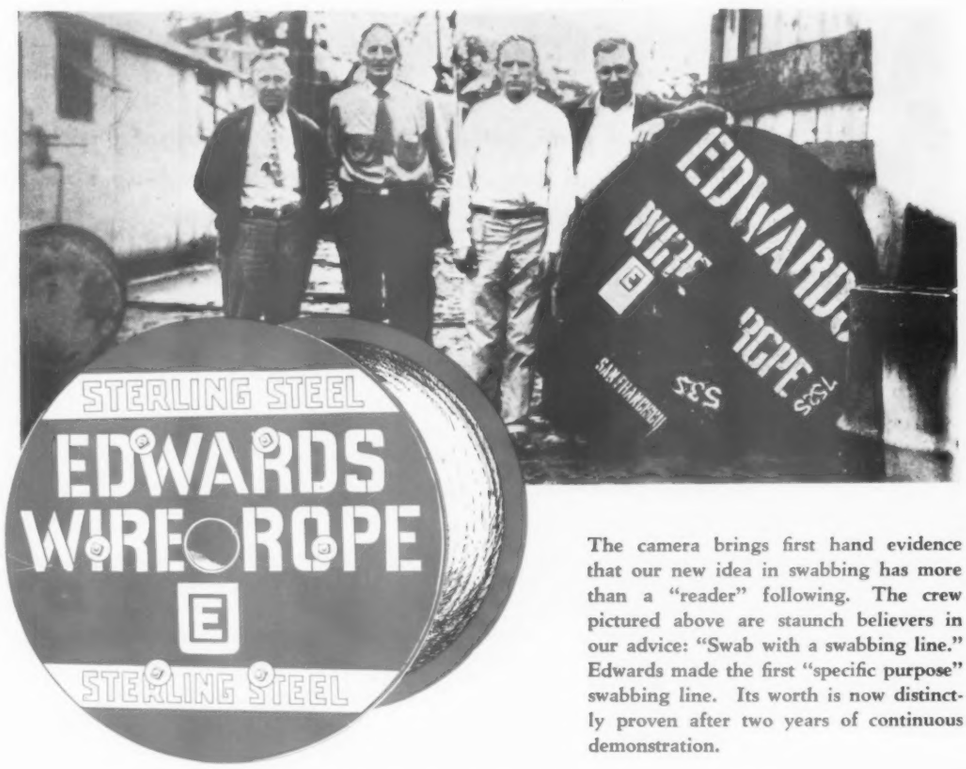


CHART NO. 2

THIS CREW SWABS WITH A SWABBING LINE



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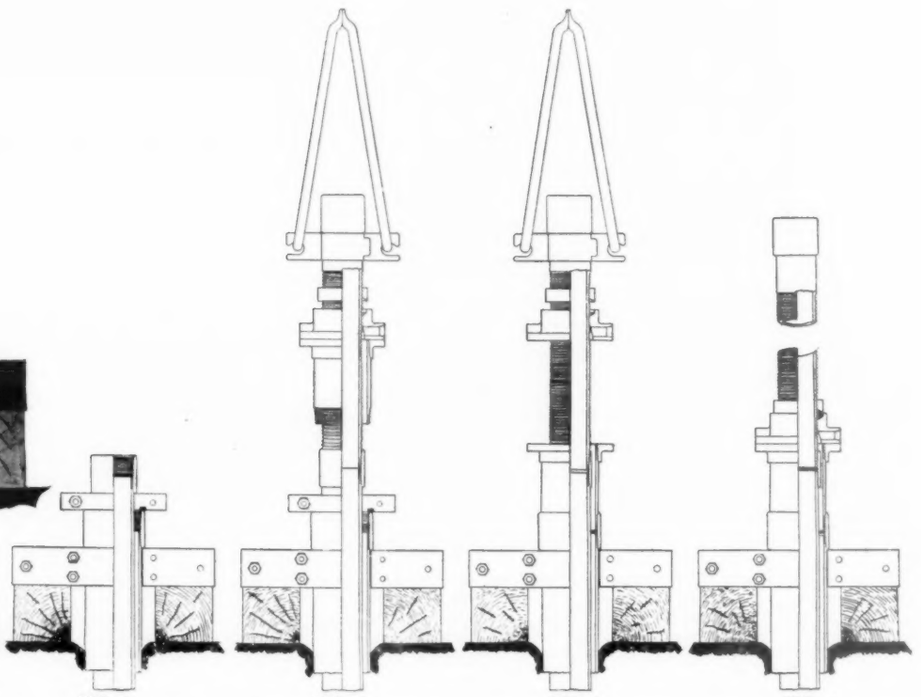

FIG. 1 Shows well in its original state, with gas packing clamps.

FIG. 2 Shows the entire head in its disassembled state made up on the inner string for the purpose of pulling sufficient tension in order to remove the gas packing clamps.

FIG. 3 With the tension maintained on the inner string and the gas packing clamps removed, the bottom flange with the aid of the short nipple is made up on the outside string.

FIG. 4 The top flange is then screwed down the long thread nipple until it contacts the bottom flange. The elevating joint is then removed, the flanges are then bolted together and the packing about the threads inserted which is compressed with the aid of a short collar. This procedure requires special equipment and must necessarily be made to order.

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REGAN CONTROL EQUIPMENT FOR ALL PRESSURES

Equipment and Methods *Of* Preventing Blow-outs in Drilling

Presented at the fall meeting, Southwestern District of the A. P. I. Division of Production, Galveston, Texas, September 4, 1930

*By *Drilling Practice Committee of Southwestern District, A. P. I.*

THE prevention of blow-outs while drilling with rotary rigs, and the ability to drill with cable tools, holes making large quantities of oil and gas without the extreme fire and mechanical danger, is very desirable to everyone connected with the business of drilling wells for oil or gas.

Blow-outs cost the oil business many thousands of dollars each year for physical expenditures alone, much oil and gas is wasted, and the danger to workmen on wells from this cause is great. It will naturally seem to many that to discuss this subject in a paper is superfluous, because, the expense, waste and danger occasioned by blow-outs in drilling is fully well-known to everyone in the oil business. To illustrate, however, that a paper on this subject may be of assistance in calling certain methods and practices of blow-out prevention to mind, we wish to state that in the spring of this year it was found necessary by the Corporation Commission of Oklahoma to pass a ruling that all companies and contractors in the Oklahoma City field must equip their wells to prevent blow-outs. Up until that time only a few wells in the entire Oklahoma City field had used master drilling gates and blow-out preventers while drilling. The main trouble with many operators in regard to this phase of drilling is that they do not consider the seriousness of blow-outs until they occur and have to be controlled. In no business is that old axiom, "An ounce of prevention is worth a pound of cure," more true than in the business of drilling oil and gas wells.

There are numerous makes and types of blow-out preventers for rotary drilling, on the market. Some of these preventers that pack off against the drill pipe are attached to the inner string of casing and are stationary with manual or steam-operated rams. Some preventers attached to the inner string of casing pack off against and rotate with the kelly. It is possible with the latter type to drill against pressure where it is found desirable to use clear water instead of mud in drilling through high pressure gas horizons or where pressure is so great that a column of pumpable mud fluid will not hold the gas pressure. There are four, possibly more, hydraulic rotary rigs being manufactured at this time. Flush joint drill pipe is customarily used with these rigs and while an ordinary type blow-out preventer can be used with any of them, all three manufacturers have developed stuffing-box types of blow-out preventers to drill through with flush joint drill pipe. With the stuffing-box and flush joint drill pipe it is possible to drill against pressure at all times. The well may be prevented from blowing out by closing a gate on the mud discharge line. Figures 1 and 2 illustrate in detail the arrangement and design of two such stuffing-box types. A stuffing-box arrangement can be employed with any ordinary type rotary rig, using flush joint drill pipe. It is considered that everyone is familiar with the ordinary type of blow-out preventers in general use; therefore detailed prints of them are not attached to this paper. Figure 3 illustrates one hook-up for drilling through a master drilling gate and blow-out preventer in use in the Mid-Continent field. High pressure areas, especially in sand formations, require more elaborate hook-ups. In such cases, it is common practice, in addition to the regular ram type blow-out preventer, to install the stationary stuffing-box type of preventer immediately above to insure complete shut-off.

Location of Controls Important

An important point to be considered in regard to manually operated blow-out preventers is the location of the controls. It is the general opinion that remote control should be practiced. Remote control can be arranged by extending the control shaft of the rams approximately 60 feet from the preventer with three-inch pipe, using universal joint for connecting the three-inch pipe to the control shaft. The control wheel should be sufficiently large for two men to operate on it at the same time. On any ordinary type of blow-out preventer the ram should be tested daily or as often as seems advisable to insure against their being jammed when needed. Steam-operated preventers should be tested many times daily to insure their working condition. Drilling crews should have frequent practice drills on closing manually operated preventers. In almost every instance of preventing a blow-out with a

*J. S. Abercrombie, W. D. Brookover, H. B. Hurley, J. I. Roberts, T. S. Schroeder, Melbert Schwarz, W. C. Thomas, A. H. Weyland and C. W. Alcorn, chairman.

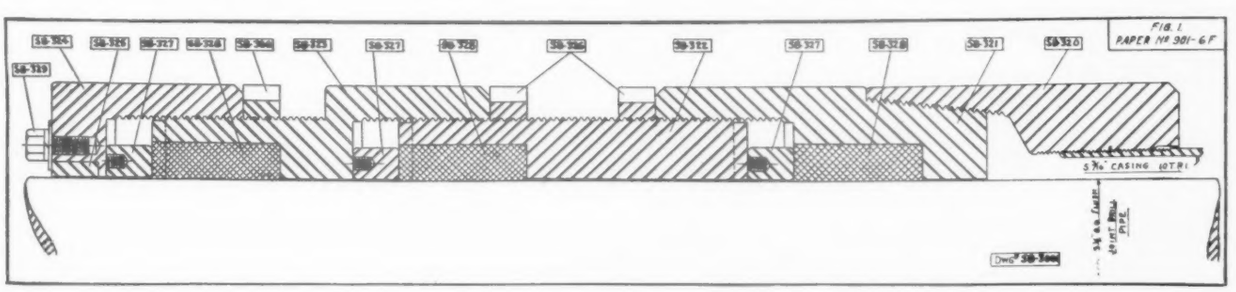

FIGURE 1

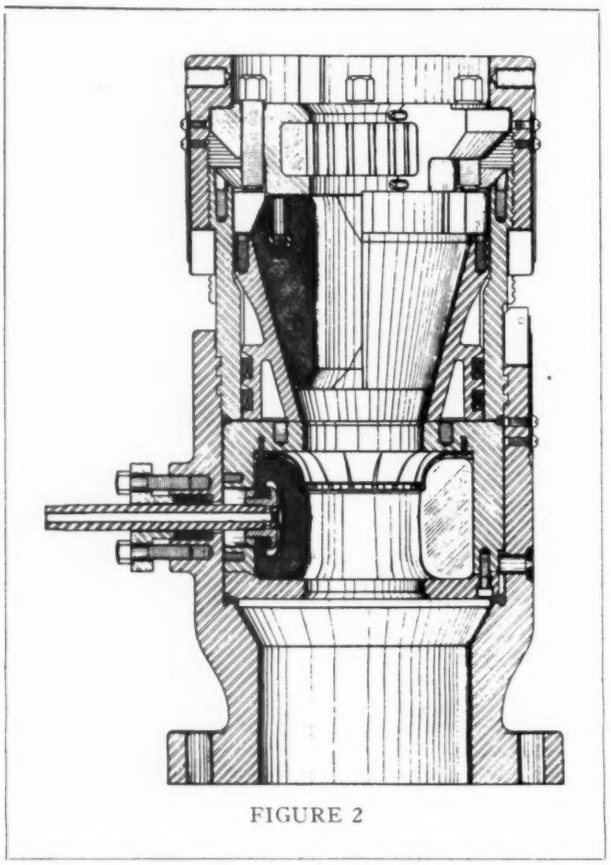

FIGURE 2

blow-out preventer speed in closing the rams is very important.

The common practice in preventing blow-out through drill pipe is to use back pressure or float valves. Where high pressures are encountered it is good practice to use two back pressure valves, one near the bit and one about midway in the string of drill pipe. This is good insurance against one of the back pressure valves failing to operate. It often may be advisable, in addition to two float valves, to use a quick-opening high pressure valve just above the swivel.

On all wildcat wells and well in areas where high pressure for the depth of the hole are known to exist, equipment such as has been described above should be used when drilling through formations known to possibly contain oil or gas.

Blow-out prevention equipment should be considered in the light of emergency equipment and should not be relied upon to prevent blow-outs except when certain conditions render proper drilling fluid useless in holding down gas. Blow-outs will not occur in drilling when proper drilling fluid is being used except when circulation is lost in a cavity or stopped by shale heaving into the hole or when such high pressures are encountered that the heaviest pumpable column of fluid will not hold back the gas. Therefore the most effective way to prevent blow-outs is to circulate mud fluid of proper weight according to the depth of the hole to hold down the known pressure of the area or the pressure of the formation to be encountered as known by pressures existing in the same formations elsewhere in the country.

A large and wholly interesting volume could be written on the subject of mud drilling fluids, and this paper will not attempt to cover this subject technically.

In some parts of the country thick beds of clay and shale are drilled through and a sufficient quantity of good mud is made for the drilling of the well. In many other parts of the country it is necessary to manufacture mud for the hole from clay. This practice is necessary in almost every field in West Texas. Some holes make large quantities of mud, but of such weight and quality that it is of very little assistance in holding down heavy pressures or walling up the hole. In these cases it may be just as necessary that proper mud be manufactured for the hole as it is in areas where little mud is made from the formations in the hole. There is considerable difference in clays from which mud can be manufactured as to weight and purity. The best clay for manufacturing drilling mud (if different grades are available) is the clay that has the greatest weight per cubic foot, when finely ground and perfectly dry, free from sand and voids. Ten and 12 per cent sand cannot be detected in some clays except in a laboratory test. Mud with a high sand content is objectionable on account of its abrasive effect on equipment and because weight in mud made up by sand is not effective in holding down heavy pressures. It is common knowledge that mud can be too plastic in drilling through gas horizons. Thick, plastic mud is much more susceptible to gas cutting than thin mud. When the condition arises where mud must be heavy to hold down gas and at the same time sufficiently fluid that it is not affected unduly by the gas, use of admixtures must be resorted to, commonly referred to as "mud-heaviers." These admixtures are usually mixed with ordinary mud in the proportions required to maintain certain weights and remain sufficiently fluid. In many cases it may be found advisable to use drilling fluid manufactured exclusively of such admixtures and water. In the Hobbs field, Lea County, New Mexico, where pressures of 1400 pounds are encountered at a depth of 2800 feet, it has been

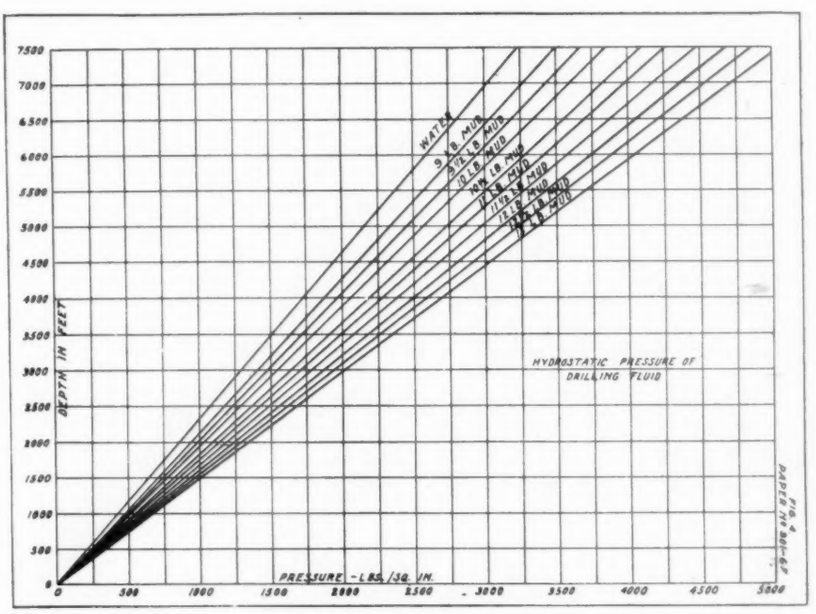

FIGURE 4

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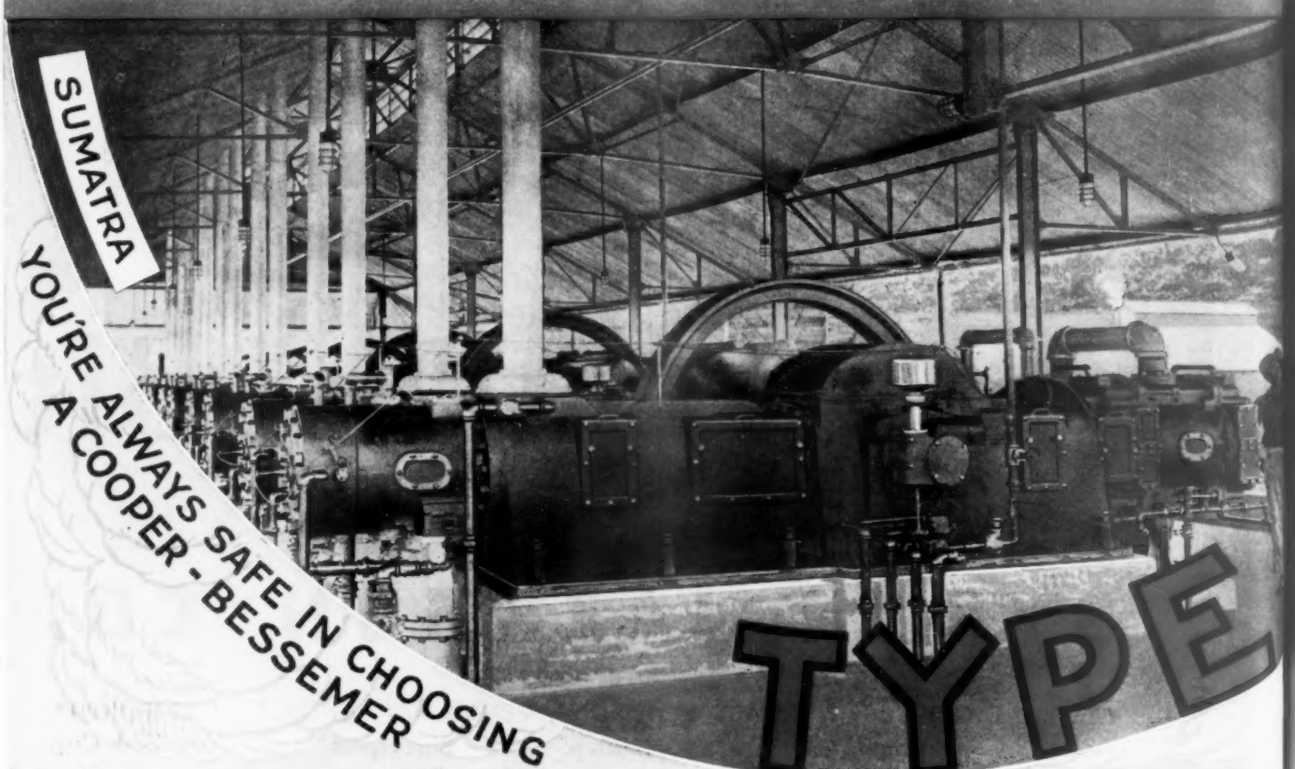

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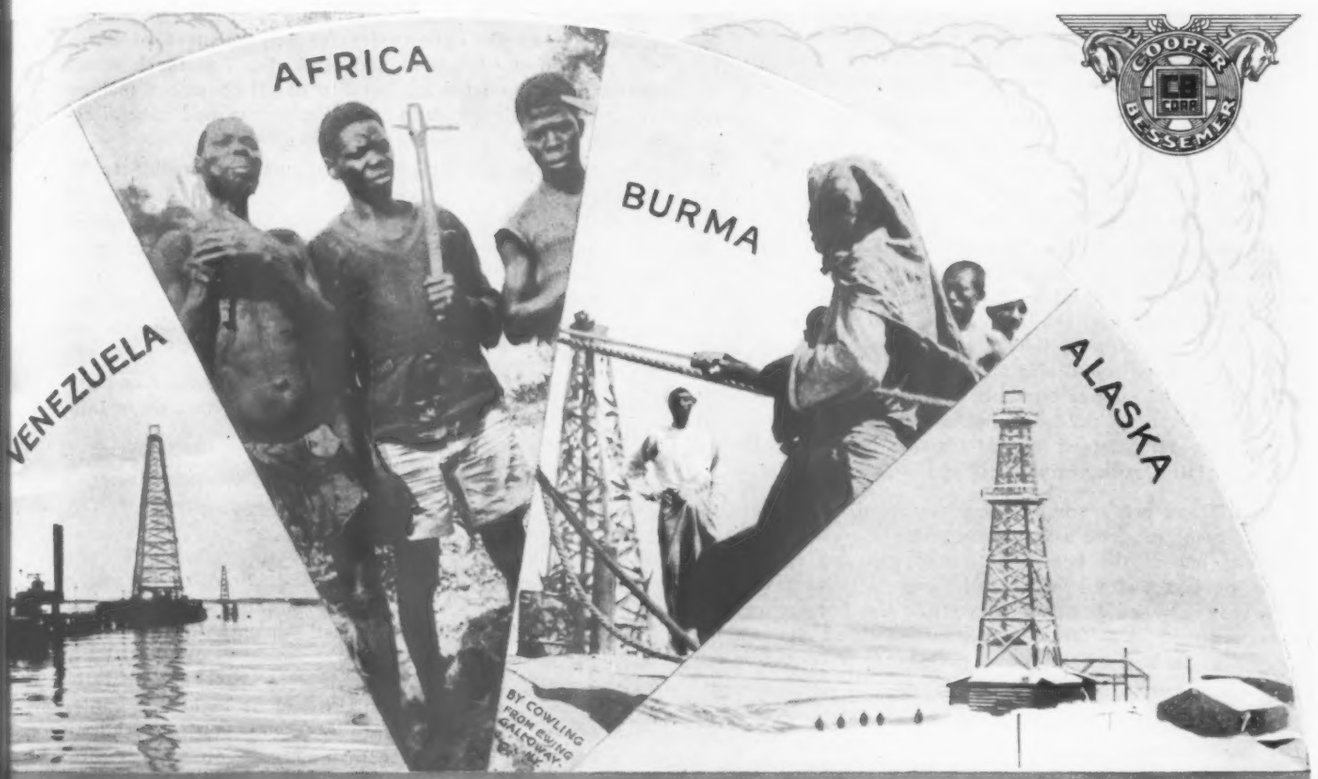

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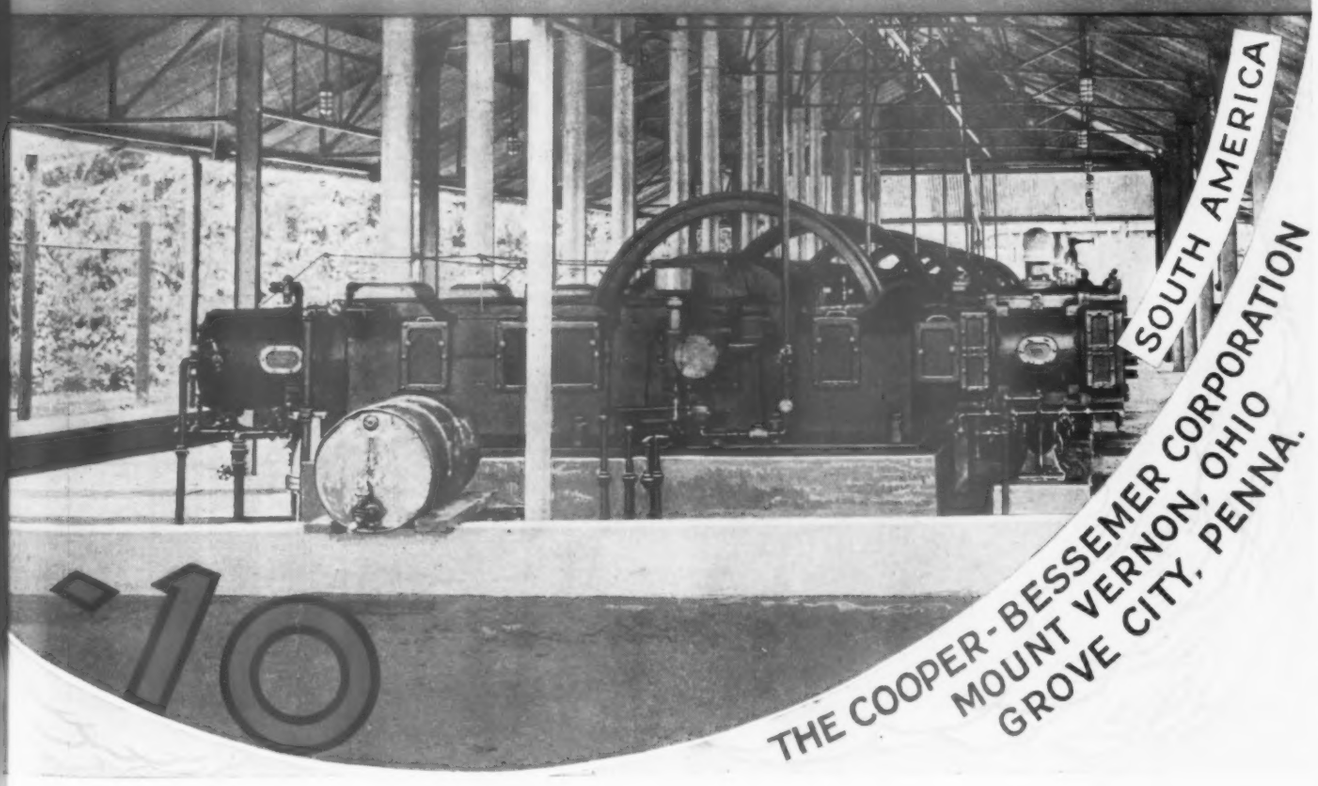

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horizons containing large volumes of gas and oil has long been a serious problem. There are several methods in use which diminish hazard and improve drilling time. We will here briefly describe some of these practices.

(a) The lubricator method is used extensively in the Yates pool, Pecos County, Texas, for drilling the wells into the pay. A high pressure control head has been developed which provides a by-pass and a ground joint connection for the lubricator pipe. A high pressure stuffing box for running the line through is used on the top of the lubricator pipe and a high pressure double rubber oil saver is used on the control head while drilling. The oil saver can be released after the lubricator pipe is in place in order to allow the tools to be pulled into the lubricator pipe. Operators have found this method to be very satisfactory. The control heads referred to above are manufactured to withstand various pressures up to 3000 pounds per square inch. Several hundred pounds may be maintained on the inside of the casing while drilling.

(b) There are several high pressure oil savers obtainable. Some of these savers are equipped for snubbing tools in and out of the hole with special snubbing devices. A stuffing box and moving part in one of these savers releases mechanically when tools strike the bottom as they are snubbed out. This arrangement allows for remote control. It is possible with several of these savers, to maintain very high pressures inside the casing while drilling. This method permits drilling without the danger of having the tools blown out of the hole while operating.

(c) A patented method of drilling and carrying casing through heavy volumes of gas is extensively used in the Panhandle (of Texas) fields. The principle of this method is that the gas pressure is balanced with water. Figure 5 attached gives an idea of the operation of this method.

Conclusion

There is ample opportunity for improvement of blow-out prevention equipment and methods. Too much stress cannot be put on the advisability of oil operators making every reasonable effort to save life, money and natural resources by preventing blow-outs in drilling.

Summarizing the foregoing, the main principles to be followed are:

1. Selection and installation of suitable blow-out prevention equipment, capable of withstanding pressures that may be expected in the area.

2. Ability of equipment so selected to function immediately in an emergency, because every blow-out is an emergency.

3. Proper training of personnel in the operation and application of that equipment so as to be effective on instant notice.

4. Proper selection, manufacture and control of weights of drilling mud.

Recommendation

The members of Texas district sub-committee, who are responsible for this paper, are of the opinion that the study of blow-out prevention is worthy of more detailed treatment and which time has prevented our doing in this paper. We believe that additional data should be prepared on specific phases, for example, a detailed study and analysis of mud laden fluids for drilling would be highly desirable, which should be made available to our field superintendents and foremen so that they may become more proficient in the selection and preparation of muds, especially in the use of admixtures and the chemical treatment of muds to add to their effectiveness in drilling. This analysis should contain concrete and specific recommendations on methods and materials that are available and practicable and which could be applied in daily use.

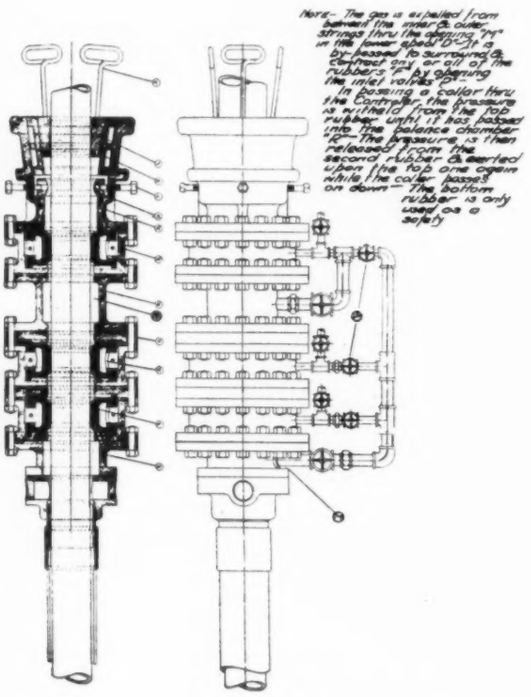

Note- The gas is expelled from
between the inner & outer
strings thru the opening "H"
in the lower sleeve "C" by
by-passing to surround the
rubber "F" by opening
the inlet valves "G"
In passing a collar thru
the Controller, the pressure
is withheld from the top
rubber until it has passed
into the balance chamber
"K" The pressure is then
released from the
second rubber & exerted
when the top one again
while the collar passes
on down — The bottom
rubber is only
used as a
safety

FIGURE 5

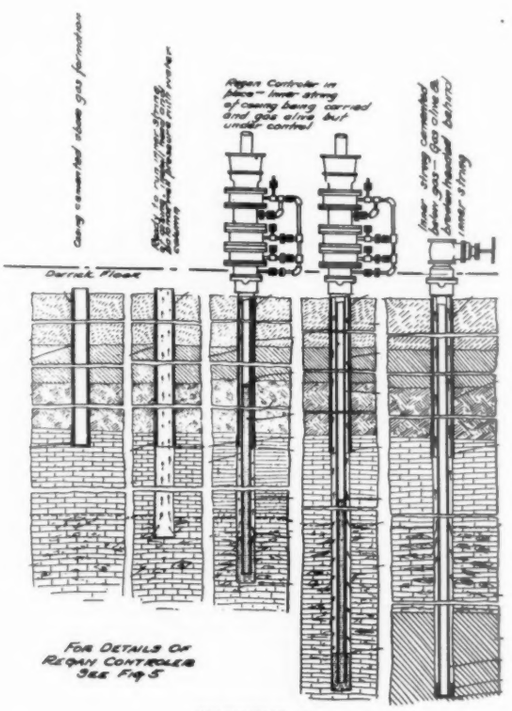
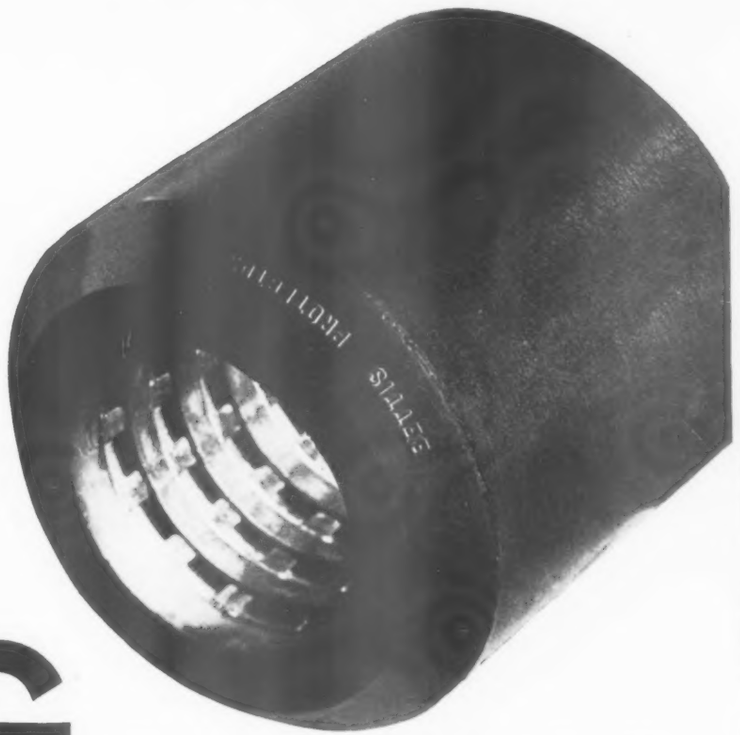


FIGURE 5-A



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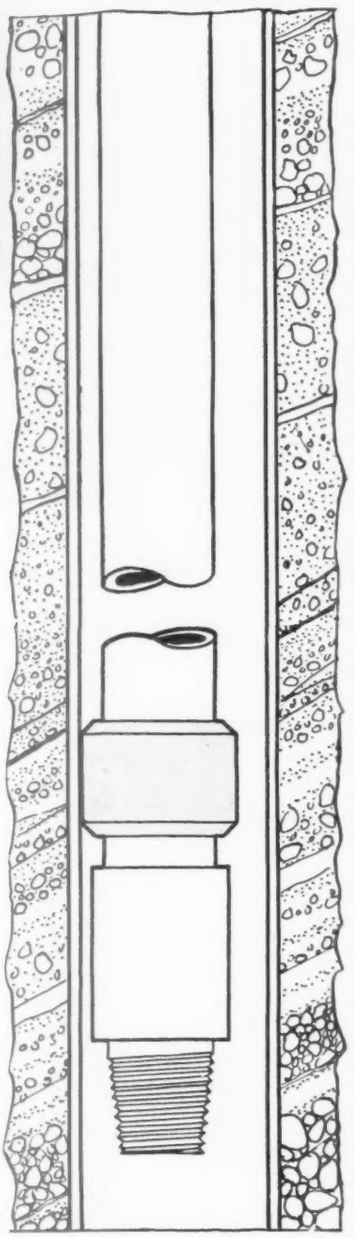

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Oklahoma City Completion Method Reduces High Pressure Well Dangers To a Minimum

Float Chamber and Shaft

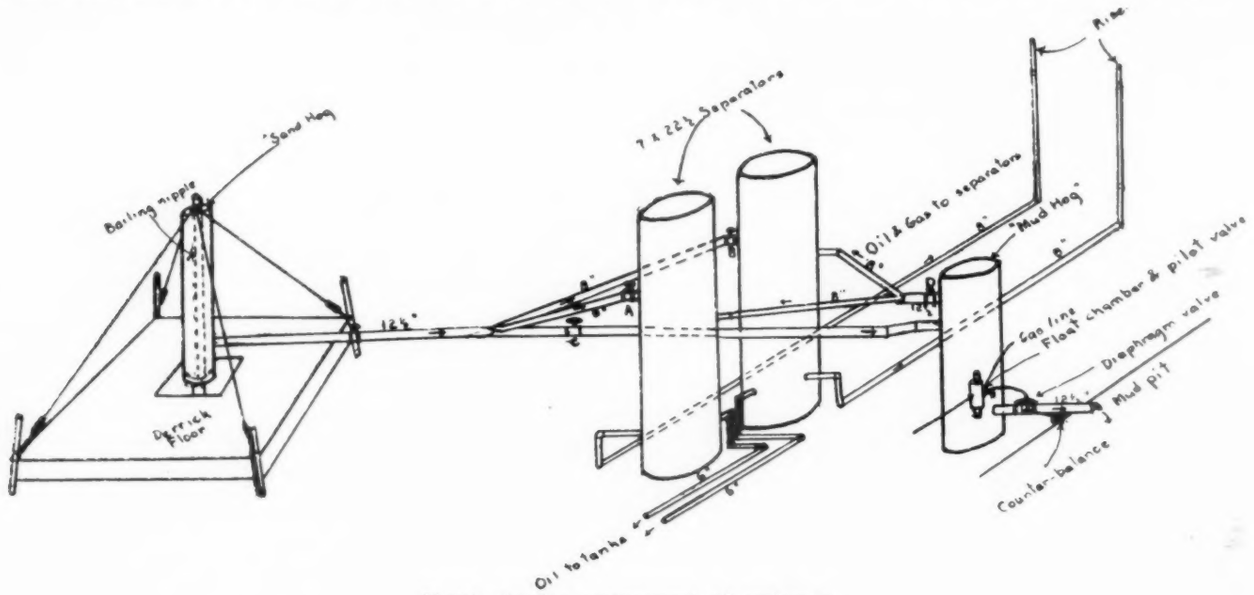
By FLOYD SWINDELL
Staff Representative

SINCE the advent of extensive drilling within the town-lot area of Oklahoma City pool, it has become imperative that an improvement be made in the method of completing wells. Insurance companies have applied for a 250 per cent increase in rates based on the hazards which attend the completion of wells by letting them clean into the air. A wild well in the northwest end of the pool would endanger the entire southeastern residential section and a large part of the business district of Oklahoma City.

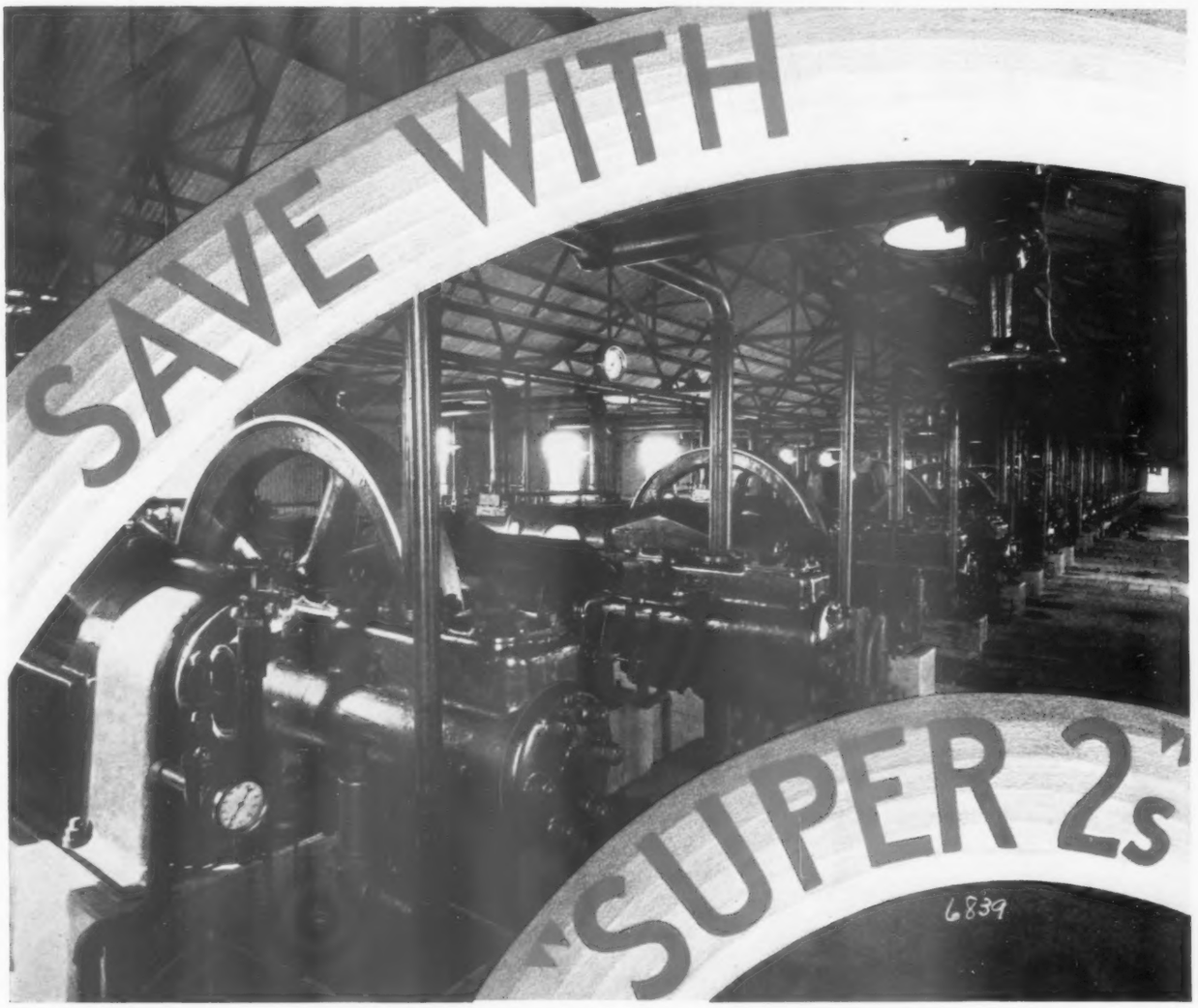
With these hazards in mind, T. B. Slick Oil Company set about to improve upon the mud-separator method which had been originated by J. R. McWilliams of Skelly Oil Company, for completing wells on the Mary Hoopes lease in the southern part of the field.

The method requires the use of two extra separators, the "sand hog," which is set directly over the well, and the "mud hog," which is located to the rear of the main separators. Figure 1 shows the general arrangement and hook-up. The sand hog is made from a three by 15 separator built for 500 pounds working pressure and tested to 800 pounds hydrostatic pressure. It is plain on the inside and has a flange connection welded into the bottom for attachment to the oil string. The flange is fitted with a nipple and collar, both of which are replaceable in a short time.

The mud hog is made from a five by 15 separator built for 125 pounds working pressure and tested to 200 pounds hydrostatic. An intermittent control arrangement is attached to the mud hog. This consists of a heavy float chamber with openings of sufficient diameter to permit the passage of large rocks and fragments of sand. The float, which is a heavy metallic ball, communicates its movement by means of a shaft to a counterweighter lever. This lever is connected to a pilot



Sketch showing arrangement of equipment



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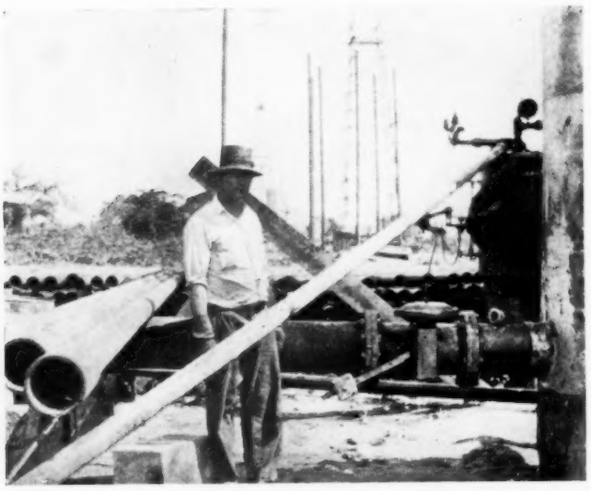
valve which controls gas pressure on the diaphragm shown in Figure 1. Gas is piped to the pilot valve from outside sources.

When the well is ready to bail the sand hog is attached to the oil string and securely anchored by means of turnbuckle rods which are fastened to the derrick legs and to casing



Oil and gas separate from mud and pass through upper lines to separators while main body of mud continues through 12½-inch line to mud hog in background

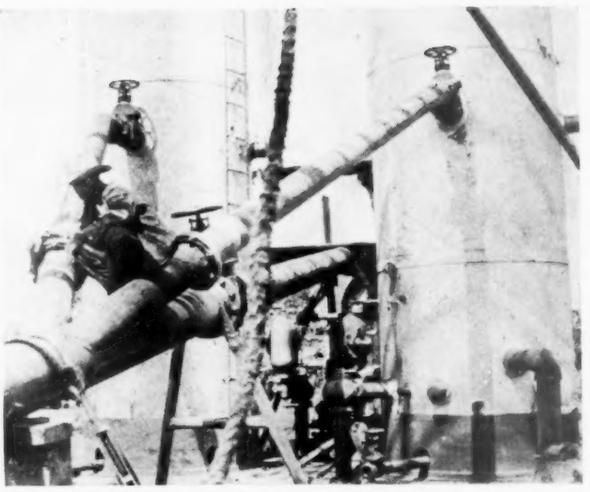
clamps in the cellar. A bailing nipple is inserted through the top of the sand hog and screwed into the bottom acting as a guide while bailing through the separator. Upon completion of bailing the master gates are closed, bailing nipple removed, and a bull plug placed in the top of the sand hog. This plug is anchored with clamps and rods. The well is then ready to clean.

Gates A, B, C and D are open. Mud, rocks, sand, oil, and gas are carried from the sand hog through a 12½-inch line to the mud hog, where the solids and mud fall to the bottom and gas, passing upward, goes out through two eight-inch lines to the main separators. Some of the gas and oil passes through the 12½-inch line to a point about midway between the derrick floor and the mud hog and reaches the main separators directly.

As the mud hog fills the float rises and, at a predetermined height, opens the pilot valve. This permits the passage of gas to the diaphragm and opens the valve at that point, causing the contents of the mud hog to be discharged into the mud pit or ditch. At the bottom position of the float the operation is reversed and the mud hog again fills. By this arrangement most of the mud comes momentarily to rest and permits some separation of gas and oil from it. The gas which actuates the pilot valve is secured from outside sources because of the dirty condition of gas coming from the well during the cleaning period. When nothing but clean gas and oil appear, gates C and D are closed and production is turned into storage through two seven by 22½-inch separators having a rated capacity of 60,000 to 100,000 barrels of oil and 200,000,000 cubic feet of gas. The equipment and hook-up shown herein was designed and built by National Tank Company.

One well which was completed in this manner blew, successively, two bull-plugs from the top of the sand hog. At the time there was some talk of the design of a heavy hydraulic plug with clamps welded to it. It is believed, however, that the plug used at this point should be of such strength as to yield more readily than the material from which the separator is made and act as a safety plug in case of the ejection of any large rocks or chunks of mud which might blow out the top of the sand hog.

The method has been used on several wells and each time has been improved until it now appears to be beyond the experimental stage and capable of bringing in large volume, high pressure wells with hazard reduced to a minimum.



Intermittent control arrangement and mud discharge line

Executive Sees Need for Much Lower Gasoline Output

AMONG the letters and comments received in connection with "What Constitutes Safe and Sane Stocks of Petroleum?" which appeared in THE OIL WEEKLY of August 1, is one from a prominent oil company executive that is of particular interest. This executive sums up his view of the industry's stock situation in part as follows:

"In connection with the article on 'Safe and Sane Stocks of Petroleum Products' it would seem to me that Mr. Struth's conclusion that 100 days' supply of crude is very ample, although I note with regret that there seems to be a leaning toward a much larger working stock of gasoline than seems to me warranted. Judging from the experience of our company, I am absolutely convinced that 20 million barrels of gasoline is ample for the United States. At times in the past when we thought there was a shortage of gasoline in the country, we found that we never reached the point where other people were not dumping.

"As the cost of carrying an extra million barrels of gasoline is $500,000 a year, the lower the program on which a company sets its working stock requirements, the more it reduces expenses by 50 cents a barrel for the working stock figure. If the industry shoots at a high figure for working stocks, it never gets past the point of finding distress gasoline on the market, and it is always saddled with unnecessary expense. One other thought which has always occurred to me in my own analysis of the situation is that the oil industry can stand the accumulation of 60 million barrels of crude over a year with much less demoralization and with better financial results than they can stand the storage of 10 million barrels of gasoline. In the last half of 1927 gasoline prices were so bad that refinery operations were curtailed and 22 million barrels of gasoline were taken out of storage. The last half of 1930 bids to be similar as to gasoline prices, but so far we can see little prospect that gasoline production will be curtailed enough to allow any serious draft on gasoline stocks over the year. Until distress gasoline is taken off the market and refiners adjust their runs to demand, I see little chance for improvement in the financial results to the industry as a whole."

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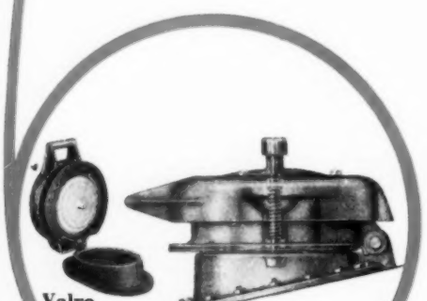

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Southwest A. P. I. Group Has Instructive Conference

By JACK LOGAN
Staff Representative

GALVESTON, Texas.—The fall meeting of the Southwestern District of the American Petroleum Institute, Division of production, held here Thursday and Friday, September 4 and 5, was generally considered one of the most successful and instructive conferences ever held by the group, the program including the reading and discussion of seven interesting papers, followed by a "question box" feature involving live discussion of various questions which were suggested.

Besides being particularly successful from the standpoint of result accomplished, the Galveston meeting was also an exceptional success in point of attendance, a total of 219 men having registered for the occasion. The place of the meeting was the Buccaneer Hotel.

The first day was given over to reading and discussion of the first six papers on the program, while the morning of the second day was occupied by the presentation of one paper and the "question box" feature, the meeting adjourning at noon of the second day. The next meeting of the organization is scheduled for next spring.

Some problems of considerable interest were discussed in the "question box" feature. W. C. Shutts, Humble Oil & Refining Company, Houston, asked what information might be given on dressing Elliott core drill bits. W. J. Childs, Reed Roller Bit Company, Houston, stressed the need for greater care in dressing bits, pointing out that investigations by his company had revealed an alarming amount of poor workmanship of that nature in many fields, with resulting high percentage of unsuccessful cores being taken. Paul L. Vaudoit, engineer for Shell Petroleum Corporation, Houston, pointed out that not only should great care be taken in dressing bits, but that success in obtaining good cores depends in large measure upon the driller, great care and skillfulness on his part being necessary. C. W. Metzger of the Haynes Stellite Company, Houston, demonstrated a model of a machine developed by Rio Bravo Oil Company for dressing bits with mechanical accuracy, a machine which, it was stated, has been tried out in actual practice with good results.

Care of Field Equipment

Another question, also suggested by W. C. Shutts, which brought forth considerable discussion was: "What action is being taken by the various companies toward educating their men in the proper use and care of field equipment?" C. A. Young of the American Petroleum Institute, Dallas, said that several companies are using posters made up under the auspices of the American Petroleum Institute, and that considerable good might result through more extensive use of them. W. J. Childs made a suggestion which apparently received extensive endorsement. He suggested that educational programs be worked out along the lines followed in safety work, the programs calling for regular meetings of the field men for discussing and working out desirable measures and methods. He pointed out that in his company's plant it was found through experience that the number of accidents was reduced by more frequent safety meetings. A representative of one producing company stated that such a program as that suggested by Mr. Childs was being carried out by his company in conjunction with its safety program, the combination of the two tending to relieve any monotony in either.

John R. Suman, Humble Oil & Refining Company, Houston, expressed the opinion that posters alone have very limited effectiveness; that the company expecting to obtain the maximum good in programs for protecting property as well as life must have a special man going around, carrying on the educational work, using posters as he has occasion and taking other effective measures. C. W. Alcorn, Shell Petroleum Corporation, Dallas, stated that in the case of smaller organizations, where there are not enough men for single company organizations, the educational programs can be carried on by local chapters of the American Petroleum Institute. There then followed considerable discussion as to the best means for inducing the members to attend such meetings, as it was held by some that the men will not go regularly to such meetings. O. H. Eichelberger, Vacuum Oil Company, Lake Charles, Louisiana, told of the safety work being done by his company in the Lockport field, saying that it had obtained successful results by holding regular monthly safety meetings of all workers in the field, a general assembly, where all entered into the discussions, while semi-monthly meetings were held by a special safety committee of seven members, including representatives of the various phases of oil field work, such as drilling, pumping, and so on. He estimated that accidents have been reduced by 50 per cent at Lockport during the several years that safety work has been carried on there.

Need for Kelly Guides

W. C. Shutts brought up the question as to the need for Kelly guides in starting holes vertical. There was some opinion that they are not necessary, but G. B. Corless, petroleum engineers, Humble Oil & Refining Company, Houston, said that recent introduction of the steel hose in rotary drilling has created such a necessity, as the hose is very heavy and tends to tilt the Kelly to one side.

Various companies using electric pumping units are now running them backward, finding that an appreciable saving is effected by that means in power costs, as well as cutting down of rig stress. This new practice was discussed by A. L. Faber of the Arkansas Power & Light Company, Pine Bluff Arkansas, and by Blaine Johnston, Simms Oil Company, El Dorado, Arkansas, the latter pointing out that in a specific instance it was found that the

ratio of effectiveness was 29 strokes backward against 26 in the regular direction. Mr. Faber's discussion was in response to the question submitted as to whether or not the crankshaft is in the right place. He stated that his company has made experiments along this line, but that thorough investigation has not yet been completed. He pointed out the mathematical factors involved, using drawings on a blackboard.

Walter H. Meier, Atlantic Oil Producing Company, Dallas, served as chairman at the Galveston meeting, although the meeting was presided over during the presentation of some of the papers by Melbert Schwarz, Rio Bravo Oil Company, Houston, and C. W. Alcorn, Shell Petroleum Corporation, Dallas. The first paper on the program, prepared and read by W. C. Shutts, petroleum engineer, Humble Oil & Refining Company, Houston, gave the results of a "Survey of Oil Field Equipment for Conformance to A. P. I. Specifications." Following is the abstract of the paper:

Need Central Inspection Department

"Although the producing companies are specifying A. P. I. equipment in part or entirely, very little inspection is done by the operators to determine whether supposedly A. P. I. equipment conforms to the A. P. I. standards. It is the writer's opinion that the majority of manufacturers are attempting to comply with the A. P. I. standards, although some equipment is represented as A. P. I. that does not conform to the specifications, and that some central inspection department would be advantageous to the manufacturer and the producer."

C. W. Alcorn, as chairman of the drilling practice committee of the Southwestern District of American Petroleum Institute, next read a paper prepared by that committee on "Equipment and Methods of Preventing Blow-Outs in Drilling." Other members of that committee include: J. S. Abercrombie, W. D. Brookover, H. B. Hurley, J. I. Roberts, T. S. Schroeder, Melbert Schwarz, W. C. Thomas and A. H. Weyland. This paper was accompanied by several drawings and illustrations of high pressure control equipment. It discussed in a general way the problems involved in handling high pressures, concluding that there is ample opportunity for improvement of blow-out prevention equipment and methods, and that the study of blow-out prevention is worthy of more detailed treatment, recommending, furthermore, that additional data should be prepared on specific phases, for example a detailed study and analysis of mud laden fluids for drilling, which would lead to more proficiency among the field men in selection and preparation of muds, especially in the use of admixtures and chemical treatment of muds to add to their effectiveness.

W. H. Meier read his paper on "Advantages of Insulation on Oil Field Boilers," including some actual experiences of savings effected through use of insulation on boilers and steam lines. Following his paper the various types of insulation were exhibited by a manufacturer's representative.

Tubing Flowing Wells

Being in line with the oil conservation efforts in progress throughout the country, the paper which Harvey Hardison, The California Company, Midland, Texas, presented was of great interest. The subject of the paper was "Effects of Tubing Flowing Wells in the Yates Field, Texas." It had been prepared by Mr. Hardison in collaboration with co-members of the Yates field engineering committee, including D. B. Courville, Gulf Production Company; P. P. Gregory, Proration engineer; W. A. Schaeffer, Shell Petroleum Corporation, Dale Nix, The California Company, and C. V. Temple, Humble Oil & Refining Company. An abstract of the paper prepared by the authors, stated: "The average gas-oil ratio in the Yates field before tubing was 450 cubic feet to the barrel. The operators realizing the advantages of conserving formational gas have adopted a tubing program to tube all wells in excess of that figure. Results from wells tubed to date indicate that this policy has increased the gas efficiency of production, caused small wells to flow steadily through tubing, and minimized the hazards of water encroachment."

Another paper which was of particular interest, and which also was timely by virtue of its bearing on the current nation-wide conservation efforts, was that prepared and read by E. H. Adams of the Trumble Gas Trap Company, Los Angeles, on "Proper Method of Installing Oil and Gas Separators."

W. T. Doherty, petroleum engineer, Humble Oil & Refining Company, Houston, next read a paper which had been prepared by him and M. Manning, production superintendent of the same company, Houston, on "Gulf Coast Cementing Problems." This paper was Part Two of a study on that subject, the first part having been included in a previous paper by the authors presented before the American Petroleum Institute meeting April 3, 1929, at Dallas. An interesting statement, made in the conclusion of the paper at Galveston, was that "The principal cause of defect or failure in the cements examined is contamination by drilling mud." Other statements in the conclusion included the following: "An important contributory cause of defect or failure has been excess water in the mix . . . Extensive carbonation is impossible in a properly mixed and set cement. . . There is no reason why the Gulf Coast cement jobs should be failures if the cement is clean and properly placed. . . To insure best results, the cement used in cementing wells must be mixed with as little water as possible and still be easily handled by the pumps."

Development of Big Lake Field

The final paper of the meeting, read Friday morning, was characterized by Chairman W. H. Meier as "probably the most complete and thorough paper ever written on the subject with which it dealt. It was the paper on "Deep Development in the Big Lake Field, Reagan County, Texas," by Melvin J. Collins and Joe W. Folk of the Big Lake Oil Company, Texon, Texas. Both authors were present, the former reading the paper, and both taking part in the lively discussion which followed its presentation. Practically every detail of equipment, operating method, and production practice was touched upon in the paper, and those details were elaborated upon in the ensuing discussion. When it was pointed out that the gas-oil ratio was decreased through increasing back pressure, John R. Suman of the Humble Oil & Refining Company, Houston, asked if the operators did not think the ratio might be successfully reduced further through tubing the wells, and Mr. Collins replied that plans have already been made to experiment by placing tubing in one well. It was brought out in the discussion and questioning after reading of the paper that no admixtures were used in rotary drilling mud; that rock pressure of 2800 pounds was built up in one of the 8500-foot wells when closed in for 30 minutes, and that if closed in for longer periods the wells would probably show as high as 3000 to 3500 pounds rock pressure; that the bottom of the hole, that is the producing horizon, is uncased, the producing formation itself being dolomite and standing up all right, although some difficulty is experienced by virtue of a cavey formation immediately above the producing horizon which also of necessity has been left uncased.

Top row, left to right: M. Bowman Thomas, T. A. Huber, W. J. Wright, J. B. McCormick, Clyde Temple, Lamar Jones, Joe Workman, F. L. Nickle, E. C. McCanlies, Harold Potter, R.K. Tracy, C. D. Alworth, Hu M. Harris, G. B. Corless, J. O. Sue. Bottom row, left to right: C. A. Dunlop, C. E. McCarter, W. T. Doherty, W. B. Nicholson, G. H. L. Kent, W. W. Scott, B. L. Moore, L. J. Wallace, W. C. Shutts, Riley Aucoin.

Humble Engineers Field Trip

HOUSTON.—Petroleum engineers of the Humble Oil & Refining Company, numbering about 25, and from headquarters of the company in all sections of Texas, convened at the home office here Tuesday, September 2, for a conference and field inspection trip before going to Galveston to attend the fall meeting of the southwestern district, division of production, of the American Petroleum Institute.

They met Tuesday in the Humble Building here, with W. W. Scott, chief petroleum engineer of the company, in charge of the meeting, to discuss various problems encountered by the men in their work. On the following morning the engineers convened at eight o'clock and left in automobiles for inspection of the Sugar Land and Raccoon Bend fields.

The engineers who attended the meeting Tuesday and went on the field trip the following day included:

Houston headquarters: W. W. Scott, B. L. Moore, W. C. Shutts, L. J. Wallace, M. Bowman Thomas, T. A. Huber, Joe Workman, F. L. Nickle, R. K. Tracy, Hu M. Harris, G. B. Corless, J. O. Sue, C. A. Dunlop, C. E. McCarter, W. T. Doherty, and G. H. L. Kent; McCamey office: W. J. Wright and Clyde Temple; Cisco office: J. B. McCormick and C. D. Alworth; Amarillo, Lamar Jones; Corsicana: E. C. McCanlies and Harold Potter; Wichita Falls: W. B. Nisholson; and Luling, Riley Aucoin.

Conferences and field trips of this kind are held by Humble Oil & Refining Company's petroleum engineers three or four times annually, the fall and spring meetings being scheduled immediately before the meetings of the production division of the American Petroleum Institute.

Phillips-Independent Stock Exchange On 76 to 100 Basis

Bartlesville, Okla.—The basis of exchange of stock in the merger of Phillips Petroleum Company and Independent Oil & Gas Company has been fixed as 76 shares of Phillips stock for each 100 shares of Independent. The ratio was announced last week, following approval of the executive committees' action in the transaction.

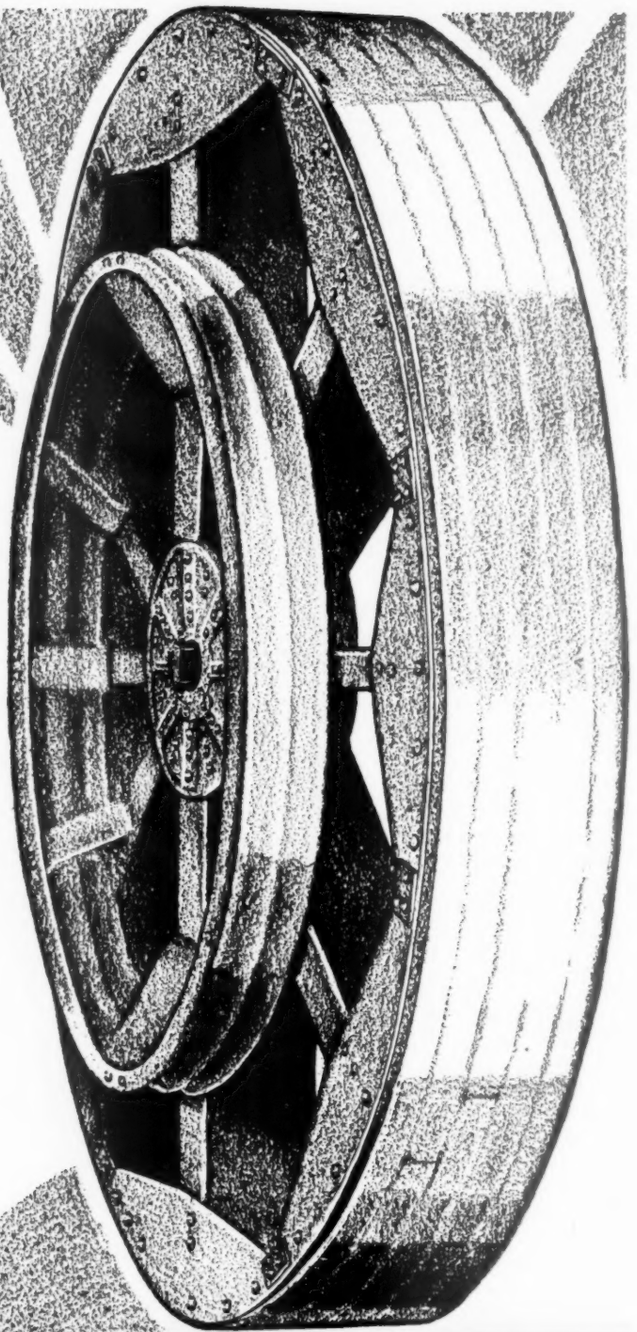
Directors of Independent Oil & Gas Company also declared an adjusted dividend of 37½ cents a share, which will be paid October 2, to stock of record September 15. This dividend will be the last paid on Independent stock and will be paid a month earlier than the regular quarterly dividend of 50 cents a share would have been.

Tidal Buys Landreth's Tank Farm and Other Properties at McCamey

Fort Worth, Texas.—Tidal Refining Company has fortified itself with about 800,000 barrels of steel storage facilities in West Texas as result of the acquisition of the Landreth Production Corporation's tank farm and physical properties at McCamey for a cash consideration of approximately $150,000. This deal gives the purchasing company surface rights to 245 acres, bearing ten 80,000-barrel steel tanks, a 60-car capacity tank car rack on the Santa Fe Railroad, and a small pump station. The tank farm was completed about January 1, 1930, by Landreth Production Corporation to take care of expected flush production from the Taylor-Link and Rowan-Tong pools, Pecos County, but only four of the tanks were put in service.

Tidal Refining Company has a long time contract to ship a maximum of 10,000 barrels of West Texas crude daily on a common carrier basis to the Gulf Coast through The Texas Pipe Line Company's trunk line, and is now shipping about 7500 barrels daily from the Church and Fields area, Crane County, on this contract. Such crude shipments are consigned to the Atlantic Coast refineries of Tide Water Oil Company, an affiliated refining concern. The newly acquired tank farm will enable Tidal Refining Company to accumulate West Texas crude during off season demand by halting shipments consigned to The Texas Pipe Line Company at McCamey.

Tidal Refining Company is gathering and purchasing all crude produced in the Hobbs field, New Mexico, by Tidal Oil Company, an affiliated concern, and has option to buy 1000 barrels daily each from Continental Oil Company and Shell Petroleum Corporation, providing the latter do not require the oil for their own plants. Tidal Refining Company has a private crude gathering system at Hobbs, and utilizes the common carrier services of Atlantic Pipe Line Company in transporting the oil to the Gulf Coast, with a 40-cent per barrel trunk line tariff applying.



Moore

BAND WHEEL

AS GOOD AS THE CHAMPION DERRICK

The full rigid strength which the proper use of steel will give is built into this wheel at the plant, and it is shipped in one piece ready to be mounted on the shaft. It has steel plate rims and rolled steel channel spokes with heavy reinforcement at the flange. The latter is of one piece in heavy duty wheels. There are no bolts in the flange, machine driven rivets through spokes and angle reinforcements carrying the heavy loads at this point. One-inch wood cants are used.

Moore Tug Rim

The tug rim, which is part of the above wheel, also gives long, economical service when used on wooden band wheels. The Moore rim is of one piece, rolled steel with double V groove tug. Heavy plate brackets are electrically welded to the rim. Standard diameter is 7′.

Moore

ALL STEEL RIG EQUIPMENT

LEE C. MOORE AND COMPANY, INC.
PITTSBURGH Established 1907 TULSA
New York Offices: Oilfield Equipment Company, 30 Church Street, New York, N. Y.
DALLAS, TEXAS WICHITA, KANSAS CASPER, WYO.
SHREVEPORT, LA. HOUSTON, TEXAS
Stocks in All Principal Fields

Markets--Production--Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

Attack on Proration Weakens Crude Market

A DECLINE of 24,300 barrels in daily production for the week ending September 6 brings crude output nearer to the goal set by the curtailment program just at the time when the program is being endangered by court action in Oklahoma. Should limitation of output in Oklahoma by official order be prohibited by court action, it is probable that enough opponents of the plan will turn loose their wells to defeat the whole program in that state, and this in turn would endanger the program in other states.

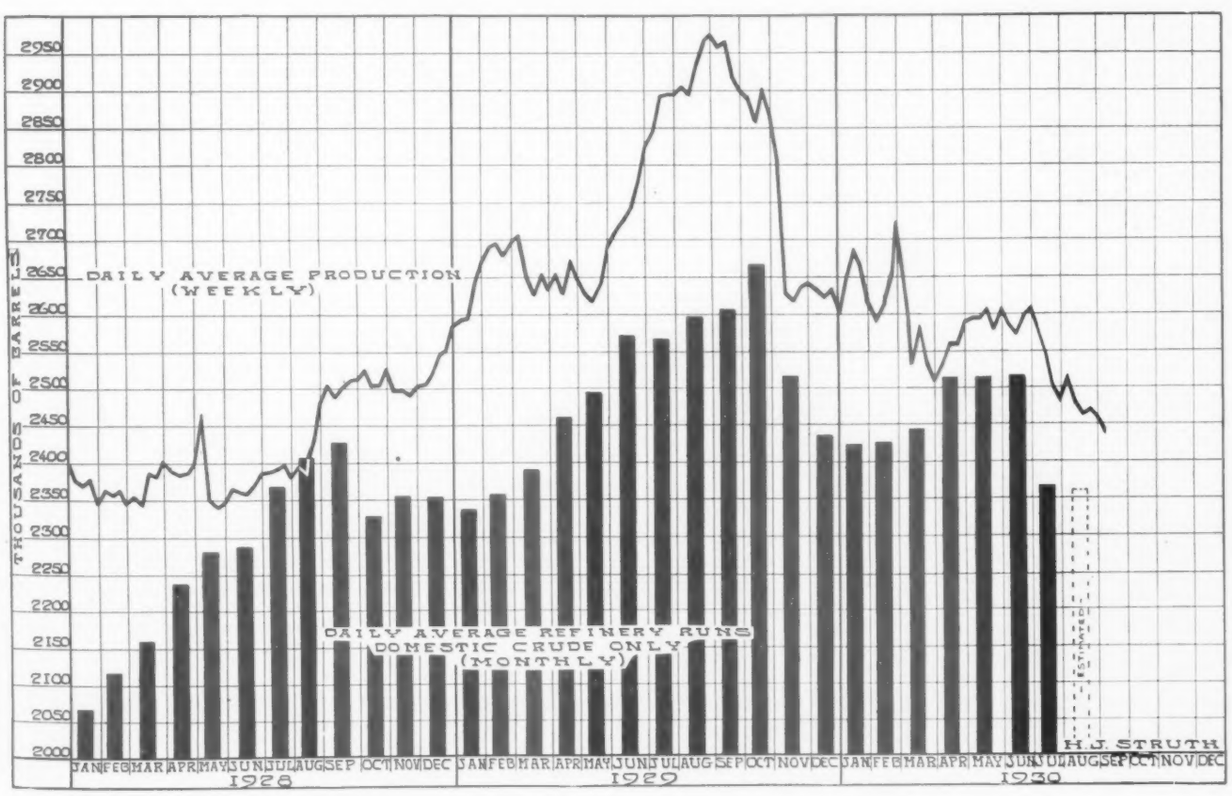
Events of the past week point toward a weakening of Mid-Continent crude price structure. Chief of these was the decision of the Supreme Court of Oklahoma, which allowed Julian Oil & Royalty Company to continue operating its Oklahoma City lease contrary to the proration order of the corporation committee.

Marco Oil & Refining Company, with one well, Holder 1, Section 2-11-3w, is running oil to the plant of Capitol Refining Company in Oklahoma City, also contrary to the proration order. A well of the Mid-Tex Company in Section 1-11-3w, is running oil to Electrical Refining Company.

Champlin Refining Company, which has a pipe line building from Oklahoma City to the refining plant at Enid, is also reported as pledged to produce its Oklahoma City properties contrary to the proration orders.

The corporation commission, which had set September 8 as the date to hear citation for violations of its orders in

DOMESTIC PRODUCTION AND REFINERY RUNS



Oklahoma City and elsewhere, postponed the hearings until September 23. By that time it is hoped the Julian case will have been decided. This decision will either substantiate the authority of the corporation commission under the constitution or leave the commission without authority to enforce its orders.

While the Julian case is yet to be decided and the violations of the order are few, the fact that some producers in Oklahoma City took the opportunity of this case to produce their properties is accepted as evidence that they were not in sympathy with proration and needed only the proper opportunity to prompt such action.

It is known also that other Oklahoma City producers, some of them with substantial production, are not in sympathy with proration and will be in sympathy with any move to break it.

There is, however, the question of where oil will run in case proration is broken down, whatever the means. Pipe line capacity will not exceed 150,000 barrels daily, unless there is a change in the attitude of the pipe line companies. Several have declined to add facilities. A few major purchasers are not in the field but with them in the field, capacity would not exceed 200,000 barrels daily, while the output of the field is estimated at 700,000 barrels daily and many believe it could produce a half-million barrels daily over a substantial period.

Other than Sinclair Oil & Gas Company the field is not drawing any storage. This company is building 22 tanks of 80,000 barrels capacity each. The small refining plants at Oklahoma City are not capable of caring for any great amount of oil.

One prospect for the field, in case similar events follow those of last week, is the battering down of prices until the pool has no posted schedule. The market for the pool could become one of barter for each sale of oil. While no statements have been made, there is a common opinion that in case of a break in proration at Oklahoma City price declines will apply chiefly to that area.

Domestic jobbers have been somewhat slow in accepting the boost in gasoline prices that have been generally quoted by Mid-Continent district refiners since September 2. These plant owners are sticking together in their announced intentions to maintain a minimum price of six cents per gallon on U. S. motor gasoline, although spot sales of motor fuel have declined during the first week of the price advance. Stocks of this commodity in jobbers hands are known to be comparatively low, and refiners are pinning their hopes on such a condition making it necessary that normal buying be resumed.

Increased cracking of gas oil and distillates has tightened the market on these products, but the general attitude of major crude purchasers toward oil connections in the Mid-Continent district as a whole continues bearish, and pipe line connections are becoming more difficult to obtain, unless the oil is tendered on a common carrier basis. High gravity oil areas in the older fields of Texas have been hit hard lately by the partial withdrawal of leading major buyers from old connections, as well as a general refusal to serve new completions. The pipe line law enacted some few months ago by independent operators of Texas has not served its intended purpose, other than to provide the legal machinery for the launching of a state wide proration program that is now being carried in various disturbing areas of the state.

Magnolia Petroleum Company is putting forth renewed efforts toward lowering its crude stocks in Oklahoma, having withdrawn 595,440 barrels, or an average of 19,208 barrels daily, during the month of August, Leaving slightly less than 6,000,000 barrels in its Oklahoma storage. This company pulled on Oklahoma stocks at average rate of 10,893 barrels daily during July.

The eagerness to stabilize California production on a lower basis is partially prompted by the realization that either the output must come down or the entire market weaken. The disparity between crude production and the prices of gasoline and crude oil are obvious to economists who claim that the proper balance has not been reached. Efforts are being made to set and maintain a higher retail gasoline price schedule. This cannot be done as long as production is at the present level. Cracking is increasing the recovery of gasoline from the amount of oil which would have been required under old refinery methods and this fact makes 600,000 barrels an excess output during the winter months of low consumption.

Playa del Rey crude is being converted into gasoline in large quantities and crude from this field is falling into

CRUDE RUNS TO STILLS, GASOLINE AND GAS AND FUEL OIL STOCKS, WEEK ENDING AUGUST 30, 1930

(Figures in barrels of 42 gallons)

District—	Potential Daily Capacity	Potential Capacity Reporting		Crude Runs to Stills			Gasoline Stocks	Gas & Fuel Oil Stocks
		Total	Per Cent	Total	Daily Average	Per Cent Operated		
East Coast	608,700	608,700	100.0	3,498,000	499,700	82.1	5,714,000	10,772,000
Appalachian	128,100	117,600	91.8	606,000	86,600	73.6	1,217,000	1,033,000
Indiana, Illinois, Kentucky	382,500	381,000	99.6	2,012,000	287,400	75.4	6,049,000	4,413,000
Oklahoma, Kansas Missouri	462,200	412,700	89.3	1,742,000	248,900	60.3	2,940,000	4,808,000
Texas	788,000	712,700	90.4	3,797,000	542,400	76.1	5,669,000	10,186,000
Louisiana-Arkansas	270,600	262,000	96.8	1,221,000	174,400	66.6	1,234,000	1,945,000
Rocky Mountain	148,900	139,300	93.6	374,000	53,400	38.3	2,054,000	1,208,000
California	897,400	891,400	99.3	3,824,000	546,300	61.3	13,938,000	105,297,000
Total Week August 30	3,686,400	3,525,400	95.6	17,074,000	2,439,100	69.2	38,815,000	139,662,000
Total Week August 23	3,686,400	3,525,400	95.6	17,861,000	2,551,600	72.4	39,842,000	139,966,000
The Total U. S. Figures for Last Year, Shown Immediately Below, are not Comparable with This Week's Totals because of Difference in Percentage Capacity Reporting								
Total August 31, 1929	3,359,200	3,130,800	93.2	18,840,000	2,691,400	86.0	31,245,000	*141,190,000
The Texas and Louisiana Gulf Coastal Figures Shown Below are Included above in the Totals of Their Respective Districts.								
Texas Gulf Coast	526,500	526,500	100.0	2,864,000	409,100	77.7	4,369,000	7,292,000
Louisiana Gulf Coast	147,500	147,500	100.0	857,000	122,400	83.0	916,000	1,214,000

*Final Revised.

the hands of both major and independent refiners. Production in this field is increasing rapidly and the area is becoming a market factor.

Progress Reported by Texas Proration Committees

At a special meeting of the central proration committee of Texas, called at Dallas on Monday by Robert R. Penn, chairman, representatives from various major producing sections of the state reported the results thus far obtained within their respective districts. On the whole, these reports seemed to indicate that everything possible is being done to bring production down to the limits ordered by the commission, although it is apparent that more time will be required before the results of present efforts will be reflected in actual production figures. In fact, judging from the reports presented, it is not improbable that at least 30 days will elapse before any real decline will result from proration efforts. At any rate, the mere fact that definite action has been taken, and that a majority of operators in most areas have agreed to abide by the plans now being developed, indicate that Texas production will shortly stage at least a part, if not all, of the decline anticipated by the order of the Texas Railroad Commission.

The only district that failed to render a favorable report was the Gulf Coast. Apparently, operators there have decided upon a watchful waiting attitude, having determined to await the outcome of the railroad commission's order in other sections of the state before taking any definite action in the Gulf Coast. The big issue in the Gulf Coast is the fact that settled production there is actually staging a decline, but in the meantime, it would appear that strenuous effort is being made to offset this natural decline with a number of new wells. Much has been said about the elimination of unnecessary drilling in flush areas of the Gulf Coast, but it is noted that new wells are being brought in without any noticeable sign of restraint. Perhaps the main reason for this can be ascribed to the fact that the demand for certain grades of Gulf Coast oil is said to be actually above current production and many operators really cannot see the necessity for curtailing production of the fields where there is a ready market for every barrel of oil produced. After all, the matter resolves itself to what the pipe line companies will actually take, rather than what operators feel they should take. In the final analysis, it is agreed, the buyer is the one who will decide the production trend. Under these conditions, it is obvious that operators will be obliged to curtail their output to actual daily market requirements, even though the railroad commission may have placed particular field quotas at higher levels.

Second Questionnaire

In an effort to obtain a late check on what the pipe line companies will actually need in the way of crude nominations for the balance of this year, David Donoghue, technical advisor of the joint committee of producers and pipe lines of Texas, has been requested to mail out another questionnaire to all crude buyers of the state, asking them to state their requirements from each section. These questionnaires have already been mailed to crude buyers and it is expected that an up-to-date report will soon be made available on this matter for the benefit of the industry of Texas. Latest developments would indicate that total crude nominations for the balance of the year will not reach the allowed outlet under the pres-

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

	Necessary Daily Average 3rd Quarter 1930	Quota Limit Prescribed to Correct Previous Excesses	Actual Daily Average Week Ending Sept. 6, 1930	Excess
Arkansas	62,431	62,431	53,500	—8,931
California	664,149	594,000	606,300	12,300
Kansas	120,222	105,554	113,550	7,996
Louisiana	60,116	58,749	65,050	6,301
Oklahoma	669,115	550,000	565,000	15,000
Texas	839,361	775,000*	804,750	29,750
Balance of U. S.	230,000	230,000	228,900	—1,100
Total	2,645,394	2,368,607	2,437,050	68,443

*Limit set by R. R. Commission beginning August 27.

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

(Barrels of 42 gallons)

	Week Ended Aug. 30	Week Ended Aug. 23
At Atlantic Coast Ports—		
Baltimore	359,000	231,000
Boston	.....	.....
New York	844,000	1,396,000
Philadelphia	196,000	116,000
Others	271,000	157,000
Total	1,670,000	1,900,000
Daily Average	238,571	271,429
At Gulf Coast Ports—		
Galveston District	.....	193,000
New Orleans and Baton Rouge	98,000	96,000
Port Arthur and Sabine District	95,000	91,000
Tampa	15,000	39,000
Total	208,000	419,000
Daily Average	29,714	59,857
At All United States Ports—		
Total	1,878,000	2,319,000
Daily Average	268,285	331,286
Daily Average Four Weeks Ended	275,036	290,929
Distribution of Total Imports is as follows:		
Crude	1,056,000	1,049,000
Gasoline	560,000	472,000
Gas Oil	.....	17,000
Fuel Oil	262,000	781,000
Total	1,878,000	2,319,000

CALIFORNIA OIL RECEIPTS AT ATLANTIC AND GULF COAST PORTS

(Barrels of 42 gallons)

	Week Ended Aug. 30	Week Ended Aug. 23
At Atlantic Coast Ports—		
Baltimore	79,000	151,000
Boston	.....	190,000
New York	320,000	114,000
Philadelphia	113,000	.....
Others	39,000	.....
Total	512,000	494,000
Daily Average	73,143	70,571
At Gulf Coast Ports—		
Total	.....	* 3,000
Daily Average	.....	429
At Atlantic and Gulf Coast Ports—		
Total	512,000	497,000
Daily Average	73,143	71,000
Daily Average Four Weeks Ended	80,679	90,464
Distribution of Total California Receipts is as follows:		
Gasoline	512,000	423,000
Gas Oil	.....	74,000
Total	512,000	497,000

*—Revised.

Weekly Comparisons of Permits Granted for New Wells

States—	Week Ending September 6	Previous week	This week 1929	Total this month	This month 1929	Total this year	Total this date last year	1929 year total
Arkansas	1	2	3	1	3	67	112	159
California	18	16	17	18	17	590	921	1,231
Louisiana	16	16	13	16	13	731	588	903
Kansas	18	11	24	18	24	738	782	1,079
Oklahoma	31	44	67	31	67	2,227	2,395	3,578
Texas	146	176	137	146	137	5,570	6,081	8,697
Total	230	265	262	230	261	9,923	10,879	15,647

ent proration order, with the possible exception of the Gulf Coast. The results obtained through these questionnaires will furnish an interesting angle to the present curtailment situation and may reveal the necessity for further downward revisions in some fields at an early date.

Umpires have been appointed for all major producing sections of the state and committee representatives at the Dallas meeting stated that these men are rapidly shaping up their plans in order to be able to effect the reductions necessary at an early date. In this connection, it was reported that H. J. Corcoran, umpire of the Panhandle area had issued his first order to operators, involving an equitable distribution of the necessary reduction in production over the wells to be affected in that section. Ed. A. Landreth reported that he had interviewed all operators in the Big Lake field of West Texas and found most of them agreeable to a careful check of their immediate positions and apparently ready to do all possible to reduce production to the prescribed limit. John Gholson, of the West Central Texas area, reported that satisfactory progress was being made in that district in getting the various companies lined up with the proration order.

In the Wichita Falls district, and throughout North Texas, it was reported that every pipe line taking oil from this area has been doing so on a different basis. This is necessitating a lot of extra work in shaping up proration plans and offers numerous difficulties in the way of arriving at an equitable basis of curtailment. It was reported that this area presents an unusual situation in that production is widely scattered over a vast area and in a majority of cases is represented by very small wells that cannot be prorated under the existing order. It was also pointed out that three or four companies operating in this area have prorated on a different basis while some adjoining leases have cut more than others. The problem before the umpire of this district now is to equalize the conditions of all operators under the existing proration order.

It is still too soon to realize a definite trend in proration developments in Texas, but it is believed that the present work being carried out by the various umpires appointed will shortly begin to show some results.

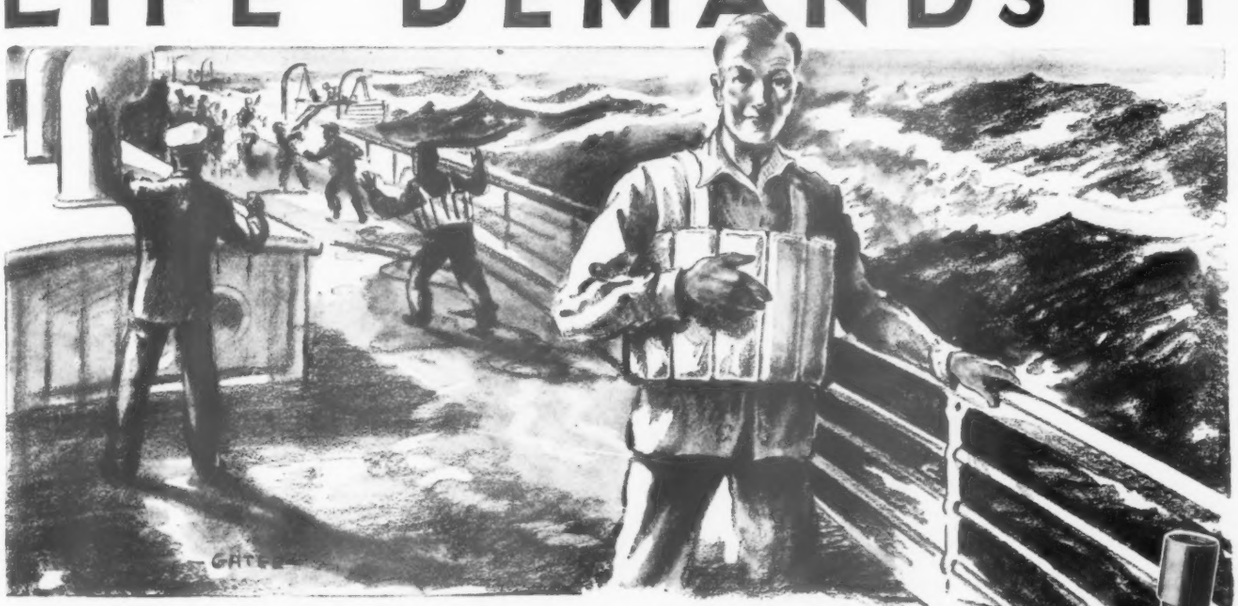
Sun's Shipments Aggregate 1,204,607 Barrels

Beaumont, Texas.—Oil shipments of the Sun Oil Company from Gulf Coast crude terminals at Sun and Sabine in the Beaumont-Port Arthur shipping district aggregated 1,204,607 barrels during August, all of it being coastwise traffic.

Summarized Review of Field Results

	Completions This week.	Completions Last week.	Oil Wells This week.	Oil Wells Last week.	Gas Wells This week.	Gas Wells Last week.	Failures This week.	Failures Last week.	Initial Prod. This week.	Initial Prod. Last week.
New York	..	2	..	2	..	..	..	...	...	4
Arkansas	6	6	4	2	..	..	2	4	132	50
California	10	19	9	14	..	..	1	5	4,475	8,225
Illinois	4	6	3	3	..	..	1	3	33	136
Indiana	1	..	1	..	..	..	..	...	5	..
Kansas	32	12	9	3	14	2	9	7	3,040	855
Kentucky	19	12	8	..	4	4	7	8	428	...
Louisiana	9	30	1	10	4	7	4	13	300	1,758
Michigan	10	..	6	..	..	..	4	...	935	...
Mississippi	1	3	..	..	..	1	1	2	...	...
Missouri	..	1	..	..	..	..	..	1	...	...
New Mexico	1	4	1	3	..	..	..	1	1,775	6,135
Ohio	35	30	12	8	11	16	12	6	77	271
Oklahoma	60	51	38	27	8	10	14	14	130,608	104,633
Pennsylvania	7	32	3	27	3	3	1	2	62	69
Texas	105	102	60	56	8	8	37	38	38,604	39,235
West Virginia	17	12	6	..	8	8	3	4	25	...
Total	317	322	161	155	60	59	96	108	180,499	161,371
Increase this week	..	..	6	..	1	..	..	...	19,128	...
Decrease this week	5	..	..	..	..	..	12	...	...	...

LIFE DEMANDS IT



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PROTECTION··

» » DOES YOUR TUBING HAVE A GUIBERSON CATCHER ATTACHED?

Danger threatens - - - on the sea, for instance - - - and you grab a life belt with no delay, slave to an instinct that orders, "Do it or die!"

By comparison, investments seem mute and helpless things in time of danger, don't you think so? When you lose money or equipment, you know nothing about it until you've lost it. That is why it requires the decision on your part to protect those things.

A string of tubing suspended in an open hole may drop at any moment, corkscrew into worthless junk, cause a shutdown and perhaps ruin your well. Positive protection from this disaster is the Guiberson Tubing Catcher, which catches a falling string of tubing within three inches. Dove-tail tracks guide the slips instantly and accurately to the casing walls. The strong spring operates with or without fluid in the hole. The heavy striker weight overcomes the retarding action of mud or paraffin. You should feel greatly concerned and decidedly in danger until you have a Guiberson Catcher in every well.

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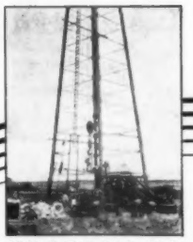
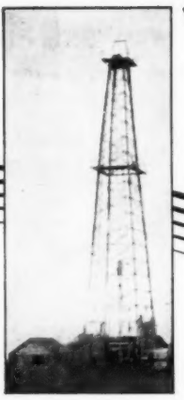
GUIBERSON

BETTER BE SAFE THAN SORRY

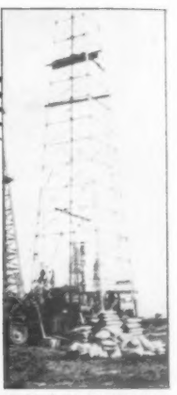
OKLAHOMA CITY FIELD



HUGOTON, KS.



VENEZUELA, S. A.



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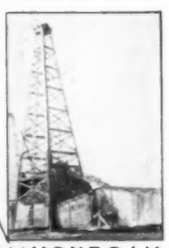
Why give your well . . . your investment . . . less than the best protection? Banish uncertainty and expensive delays. Use Oilmax! Your cement dealer stocks it or can secure it for you on short notice.



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United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1929	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
August	728,100	127,950	750,750	153,100	36,300	66,900	126,600	77,900	873,300	2,940,900	91,167,250
September	714,050	128,450	741,200	156,600	37,050	65,300	137,250	78,600	874,850	2,933,350	88,000,650
October	673,600	113,400	714,550	167,050	39,700	64,550	137,400	77,950	876,600	2,864,800	88,809,500
November	640,300	110,050	702,350	171,350	36,750	63,700	135,400	76,550	706,500	2,642,800	79,285,050
December	650,000	111,600	687,850	161,350	38,700	61,850	140,650	76,150	698,200	2,626,350	81,417,000
1930											
January	671,050	111,700	672,650	178,300	37,650	58,500	142,250	73,850	688,850	2,634,800	81,574,650
February	631,900	111,400	654,600	199,950	39,450	58,400	135,050	74,850	746,550	2,652,150	74,280,200
March	622,650	115,500	644,400	206,000	41,600	58,600	132,700	73,600	649,000	2,544,050	78,865,400
April	657,050	122,200	640,950	206,800	42,100	57,800	138,700	75,950	625,790	2,576,250	77,018,100
May	663,300	131,000	662,350	203,900	39,900	53,800	137,150	82,500	623,700	2,597,700	80,529,600
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	560,100	115,700	648,300	206,650	41,450	55,150	128,600	105,900	611,150	2,473,000	76,664,350
Sept. 6	565,000	113,550	625,150	204,200	40,450	53,500	122,850	106,050	606,300	2,437,050	17,059,350
Increase	.....	.....	.....	.....	.....	.....	.....	2,300	3,300	.....	.....
Decrease	9,200	2,050	13,300	2,000	350	1,200	1,800	.....	.....	24,300	170,100

TEXAS
(Outside Gulf Coast)
PANHANDLE DISTRICT

	Sept. 6	Aug. 30
Carson County	8,350	9,000
Gray County	67,100	70,800
Hutchinson County	20,800	21,600
Wheeler County	700	750
Others	500	350
Total	97,450	102,500

NORTH TEXAS

Archer County	15,150	15,100
Burkburnett	7,700	7,700
Electra	10,550	10,600
Iowa Park-KMA	5,300	5,300
Montague and Cooke Cos.	9,950	9,850
Wilbarger	20,800	21,800
Others	1,750	1,750
Total	71,200	72,100

WEST CENTRAL TEXAS

Brown County	5,900	5,900
Callahan County	3,100	3,100
Coleman County	2,850	2,850
Eastland-Desdemona	5,350	5,400
Jack County	2,500	2,500
Palo Pinto County	500	500
Shackelford County	6,800	6,950
Stephens County	5,550	5,600
Throckmorton County	750	750
Young County	16,800	* 16,850
Others	1,900	1,950
Total	52,000	52,350

WEST TEXAS

Crane-Upton Counties	39,150	38,800
Crockett County	2,200	2,200
Ector	6,100	7,300
Howard County	22,700	22,750
Jones County	1,300	1,300
Mitchell-Scurry Cos.	2,200	2,200
Pecos County	3,250	3,550
Reagan County	22,400	21,950
Winkler County	68,200	68,450
Yates	103,800	104,450
Others	4,650	4,700
Total	275,950	277,650

EAST CENTRAL TEXAS

Boggy Creek	2,900	2,900
Corsicana-Powell	5,600	5,550
Currie	500	400
Mexia	4,600	4,650
Nigger Creek	150	150
Richland	200	200
Van Zandt	25,400	25,250
Wortham	800	800
Total	40,150	39,900

SOUTHWEST TEXAS

Chapman	3,650	9,000
Dale	300	300
Darst Creek	42,300	42,200
Laredo District	13,600	13,800
Luling	9,000	9,000
Lytton Springs	850	850
Salt Flat	16,500	16,500
Somerset	1,600	1,600
Others	600	600
Total	88,400	93,950
T'tl Tex. (outside Gulf Coast)	625,150	638,450

TEXAS GULF COAST

Barbers Hill	18,900	19,200
Batson	1,150	1,100
Big Creek	3,500	3,800
Blue Ridge	2,000	1,700
Boling	1,000	1,000
Damon Mound	700	700
Esperson	2,750	2,700
Fannett	700	900
Goose Creek	4,600	4,500
Hankamar	1,900	2,100
Hull	8,950	8,600
Humble	21,000	23,500
North Dayton	900	900
Orange	2,700	22,00
Orchard	2,300	2,500
Pettus	7,700	6,750
Pierce Junction	12,850	12,400
Port Neches	1,450	1,700
Raccoon Bend	12,300	11,900
Refugio	28,150	28,650
Saratoga	1,100	1,000
Somerville	2,150	1,400
Sour Lake	2,250	2,200
South Liberty	3,500	3,600
Spindle Top	16,900	16,850
Sugar Land	11,900	12,100
West Columbia	4,300	3,900
Others	2,500	2,500
Total	179,600	180,350
Texas Total	804,750	818,800

OKLAHOMA

Allen	15,700	15,100
Asher	1,300	1,200
Blackwell	2,950	2,950
Bowlegs	14,850	14,400
Braman	3,300	3,300
Bristow Slick	15,200	15,250
Burbank	15,500	15,500
Carr City	8,400	7,600
Cromwell	7,450	7,400
Cushing	13,350	13,400
Davenport	1,200	1,200
Duncan District	9,450	9,450
Earlsboro	19,650	21,900
East Earlsboro	14,800	15,200
East Little River	14,150	13,000
East Seminole	2,250	2,350
Fox	1,150	1,150
Garber	4,600	4,600
Graham	3,250	3,250
Healdton	11,850	11,900
Hewitt	7,050	7,100
Hubbard	1,450	1,450
Konowa	21,300	14,100
Little River	22,650	22,700
Logan County	4,600	4,700
Maud	2,500	4,150
Mission	6,400	6,650
North Okmulgee	10,250	10,250
Oklahoma City	105,350	121,300
Osage (outside Burbank)	25,350	25,350
Papoose	2,550	2,500
Pearson	700	750
St. Louis	23,650	23,500
Sasakwa	4,050	4,950
Scholem Alechem	14,000	13,500
Searight	7,550	7,500
Seminole	14,000	14,800
South Earlsboro	10,850	8,900
South Okmulgee	7,000	7,000
Thomas	700	700
Tonkawa	6,400	6,400
West Asher	9,250	8,750
Wewoka	3,700	3,700
Yale Jennings	7,750	7,800
Others	65,600	65,600
Total	565,000	574,200

CALIFORNIA

Dominguez	10,000	10,000
Elwood-Goleta	40,000	35,500
Huntington Beach	27,800	28,700
Inglewood	17,500	17,500
Kettleman Hills	16,000	15,000
Long Beach	101,000	104,500
Midway-Sunset	64,000	64,000
Playa Del Rey	19,000	13,000
Santa Fe Springs	106,000	107,800
Seal Beach	18,500	20,000
Ventura Avenue	47,000	47,500
Others	139,500	139,500
Total	606,300	603,000

KANSAS

Augusta-Fox Bush	2,650	2,650
Churchill	3,600	3,600
Eldorado-Towanda	13,800	13,800
Florence-Covert	750	750
Greenwood County	19,000	19,050
Oxford	2,550	2,650
Peabody-Ebling	2,500	2,500
Rainbow Bend	1,050	1,050
Russell	3,300	3,300
Sedgewick	20,150	19,500
Voshell	8,200	10,250
Others	36,000	36,500
Total	113,550	115,600

NORTH LOUISIANA

Caddo Heavy	2,550	2,550
Caddo Light	9,350	9,350
Carterville	2,700	3,300
Cotton Valley	1,950	2,000
DeSoto-Red River	3,050	3,050
Haynesville	4,750	4,750
Holly	1,100	1,000
Homer	3,500	3,500
Urania	5,250	5,250
Zwolle	4,300	4,350
Others	1,950	1,700
Total North Louisiana	40,450	40,800

LOUISIANA GULF COAST

Bayou Boullion	100	150
East Hackberry	2,400	2,300
Edgerly	1,050	500
Evangeline	400	2,100
Hackberry	2,050	1,100
Lake Barre	1,100	1,100
Lockport	2,700	2,700
Port Barre	3,300	3,350
Sorrento	100	100
Sulphur Dome	3,100	3,000
Sweetlake	1,150	1,200
Vinton	4,550	5,350
White Castle	1,200	1,200
Others	1,400	1,700
Total Louisiana Gulf Coast	24,600	25,850
Louisiana Total	65,050	66,650

ARKANSAS

Champagnolle	3,750	4,250
El Dorado	4,050	4,200
Lisbon	900	950
Nevada	1,000	1,000
Smackover Heavy	36,750	37,250
Smackover Light	5,050	5,100
Stephens	900	900
Others	1,100	1,050
Total	53,500	54,700

MOUNTAIN STATES
WYOMING

Big Muddy	2,000	2,000
Elk Basin	700	750
Grass Creek	2,050	2,100
La Barge	1,900	1,950
Lance Creek	100	100
Lost Soldier	4,100	3,700
Oregon Basin	2,500	3,000
Rock River	2,200	2,100
Salt Creek	24,850	29,000
Others	5,150	5,000
Total	45,550	49,700

MONTANA

Cat Creek	1,150	1,150
Pondera	2,050	2,350
Sunburst	5,850	5,850
Others	50	50
Total	9,100	9,400

COLORADO

Florence	500	400
Fort Collins	1,250	1,300
Moffats (Craig)	1,150	1,150
Others	1,600	1,600
Total	4,500	4,450

NEW MEXICO

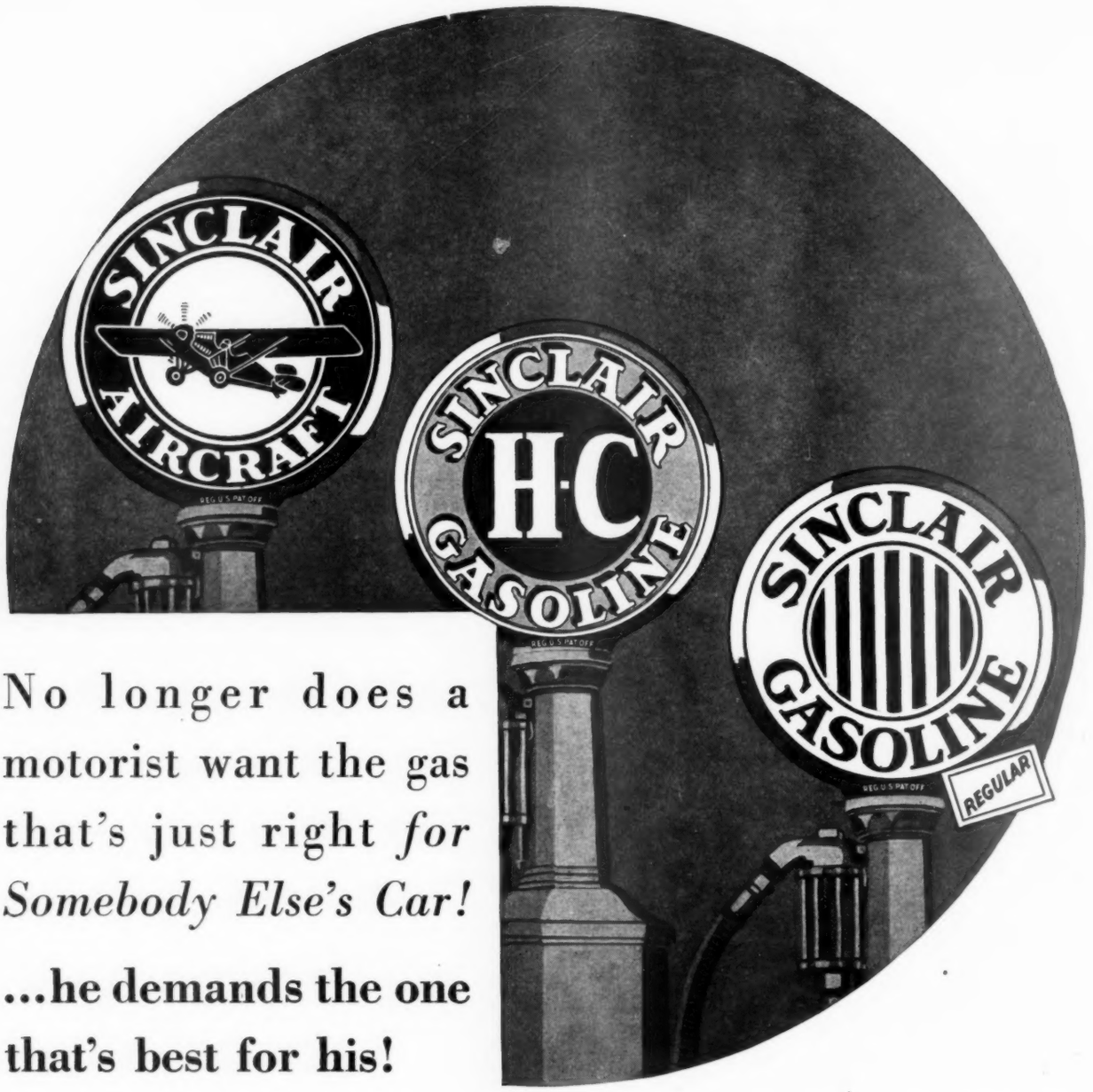
Artesia	700	700
Bal. Lea & Eddy Counties	44,200	37,550
Hogback	400	450
Rattlesnake	1,300	1,300
Table Mesa	100	100
Others	200	100
Total	46,900	40,200
Total Mountain States	106,050	103,750

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., N. Y.)	113,500	114,500
Michigan	9,350	10,150
Total Eastern States	122,850	124,650

PRODUCTION SUMMARY

East of Rockies	1,724,700	1,754,600
Total U. S.	2,437,050	2,461,350



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Here, in Sinclair Three-Gas Service, you can offer *Aircraft* Gasoline, the *Ace* of high test gasolines—if a motorist wants quick getaway and flashy, brilliant road-performance. Sinclair Aircraft is the Ace of high test gasolines because it is specially manufactured at Sinclair Refineries, meeting the requirements of the Federal Specifications Board for Aviation Gasoline—domestic grade—and gives sustained power. Due to its careful fractionation it is free from dissolved gases which cause gas locks, uneven distribution, galloping and engine balk.

Or, if he wants high compression performance—if the engine knocks now and then—recommend Sinclair *H-C* Gasoline. H-C stops knocks. It's *all* gasoline—nothing added.

Thirdly—if he prefers to pay three cents less per gallon but wants a gas that's full of eager power and full of economical mileage—sell Sinclair *Regular* Gasoline! The quality gasoline at a popular price.

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SINCLAIR REFINING COMPANY, INC., 45 Nassau Street, New York—*Atlanta, Chicago, Houston, Kansas City*

SINCLAIR THREE-GAS SERVICE

Crude Oil Price Quotations

(Revised to September 9, 1930)

EASTERN STATES

(Effective August 22, 1930)

*Bradford Grade	$2.40
Penn Grade Oil in National Transit Lines (Pennsylvania)	2.35
Penn Grade Oil in Southwest Pennsylvania Lines (Penna.)	2.30
Penn Grade Oil in Eureka Pipe Line Lines (West Virginia)	2.20
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	1.80
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.55
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Lines	1.30
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines	1.50
Somerset Oil in Cumberland Pipe Line Lines (Kentucky)	1.30
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Effective Jan. 29, 1929)	.60
Wayne Dist. Oil in Cumberland Pipe Lines	1.24

*Posted by Tidewater Pipe Company.

CENTRAL STATES

(Effective June 26, 1930)

Posted by Ohio Oil Company

Illinois	$1.65
Indiana	1.32
Lima	1.55
Plymouth	1.23
Princeton	1.65
Wooster	1.65

WESTERN KENTUCKY

All grades	1.55

OKLAHOMA-KANSAS

(Effective April 10, 1930)

Below 25 gravity	$ .70
25 to 25.9 gravity	.70
26 to 26.9 gravity	.76
27 to 27.9 gravity	.82
28 to 28.9 gravity	.88
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.10
32 to 32.9 gravity	1.15
33 to 33.9 gravity	1.185
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.255
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.325
38 to 38.9 gravity	1.36
39 to 39.9 gravity	1.395
40 to 40.9 gravity	1.43
41 to 41.9 gravity	1.465
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.535
44 and above	1.57

PANHANDLE

(Effective April 10, 1930)

GRAY COUNTY

Below 29 gravity	.755
29 to 29.9 gravity	.805
30 to 30.9 gravity	.855
31 to 31.9 gravity	.905
32 to 32.9 gravity	.955
33 to 33.9 gravity	1.005
34 to 34.9 gravity	1.055
35 to 35.9 gravity	1.09
36 to 36.9 gravity	1.125
37 to 37.9 gravity	1.16
38 to 38.9 gravity	1.195
39 to 39.9 gravity	1.23
40 to 40.9 gravity	1.265
41 to 41.9 gravity	1.30
42 to 42.9 gravity	1.335
43 to 43.9 gravity	1.37
44 and above	1.405

CARSON-HUTCHINSON COUNTIES

Below 32 gravity	$ .775
32 to 32.9 gravity	.825
33 to 33.9 gravity	.875
34 to 34.9 gravity	.925
35 to 35.9 gravity	.965
36 to 36.9 gravity	.995
37 to 37.9 gravity	1.03
38 to 38.9 gravity	1.065
39 to 39.9 gravity	1.10
40 to 40.9 gravity	1.135
41 to 41.9 gravity	1.17
42 to 42.9 gravity	1.205
43 to 43.9 gravity	1.24
44 and above	1.275

WHEELER COUNTY

Below 30 gravity	$ .755
30 to 30.9 gravity	.805
31 to 31.9 gravity	.855
32 to 32.9 gravity	.905
33 to 33.9 gravity	.955
34 to 34.9 gravity	1.005
35 to 35.9 gravity	1.04
36 to 36.9 gravity	1.075
37 to 37.9 gravity	1.11
38 to 38.9 gravity	1.145
39 to 39.9 gravity	1.18
40 to 40.9 gravity	1.215
41 to 41.9 gravity	1.25
42 to 42.9 gravity	1.285
43 to 43.9 gravity	1.32
44 and above	1.355

WEST TEXAS

(Effective April 10, 1930)

Crane-Upton, Crockett, Ector, Howard, Pecos and Winkler Counties and Lea County, N. Mex.

Below 25 gravity	$ .65
25 to 25.9 gravity	.68
26 to 26.9 gravity	.71
27 to 27.9 gravity	.74
28 to 28.9 gravity	.77
29 to 29.9 gravity	.80
30 to 30.9 gravity	.83
31 to 31.9 gravity	.86
32 to 32.9 gravity	.89

CALIFORNIA CRUDE OIL PRICES AT THE WELL
(EFFECTIVE JUNE 14, 1930)

Following are the current prices offered by Standard Oil Company for crude oil at the wells; (Price per barrel of 42 gallons in fields indicated)

Gravity	Ventura*	Signal Hills	Alamitos Heights Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$ .70	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ .70	$ .70	$ .70	$ .70	..	$ .55	$ .55	$ .55	$ .55	$ .55	$ .55
15-15.9	.70	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.55	.55	.55	.55	.55	.55
16-16.9	.70	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.55	.55	.55	.55	.55	.55
17-17.9	.70	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.55	.55	.55	.55	.55	.55
18-18.9	.75	.76	.76	.76	.76	.76	..	..	.76	.76	.76	.71	.76	..	.55	.62	.62	.62	.62	.62
19-19.9	.80	.82	.82	.82	.82	.82	..	..	.82	.82	.82	.77	.82	..	.55	.70	.70	.70	.70	.70
20-20.9	.85	.88	.88	.88	.88	.88	..	..	.88	.88	.87	.83	.87	..	..	.78	.78	.78	.78	.78
21-21.9	.90	.94	.94	.94	.94	.94	..	..	.94	.94	.93	.90	.93	.92	..	.86	.86	.86	.86	.86
22-22.9	.97	1.00	1.00	1.00	1.00	1.00	..	..	1.00	1.00	.98	.97	.98	.95	..	.94	.94	.94	.94	.94
23-23.9	1.05	1.07	1.07	1.07	1.07	1.07	..	..	1.07	1.07	..	1.05	1.04	1.01	..	1.02	1.02	1.02	1.02	1.02
24-24.9	1.08	1.14	1.14	1.14	1.14	1.14	1.14	..	1.14	1.14	..	1.11	1.10	1.07	..	1.09	1.09	1.09	1.07	1.07
25-25.9	1.13	1.21	1.21	1.21	1.21	1.21	1.19	..	1.21	1.21	..	1.17	1.16	1.13	..	1.16	1.16	1.16	1.12	1.12
26-26.9	1.18	1.28	1.28	1.28	1.28	1.28	1.24	..	1.28	1.28	..	1.23	1.23	1.19	..	1.23	1.23	1.23	1.17	1.17
27-27.9	1.23	1.35	1.35	1.35	1.35	1.35	1.29	..	1.35	1.35	..	1.29	1.30	1.25	..	1.30	1.30	1.30	1.23	1.22
28-28.9	1.28	1.42	1.42	1.42	1.42	1.42	1.34	..	1.42	1.42	..	1.35	1.37	1.31	..	1.35	1.35	1.35	1.27	..
29-29.9	1.33	1.46	1.46	1.46	..	1.46	1.39	..	..	1.46	..	1.38	1.41	1.37	..	1.41	1.41	1.41	1.31	..
30-30.9	1.39	1.50	1.50	1.50	..	1.50	1.45	..	..	1.50	..	1.41	1.45	1.43	..	1.47	1.47	1.47	1.35	..
31-31.9	1.45	1.55	1.55	1.55	..	1.55	1.51	..	..	..	..	..	..	1.49	..	1.53	1.53	1.53	1.39	..
32-32.9	1.51	1.60	1.60	1.60	..	..	1.57	..	..	..	..	..	..	1.55	..	1.59	1.59	1.59	1.43	..
33-33.9	1.58	..	..	..	..	..	1.64	..	..	..	..	..	..	1.60	..	1.65	1.65	1.65	1.47	..
34-34.9	..	..	..	..	..	..	1.71	1.32	..	..	..	..	..	1.65	..	..	..	1.71	1.51	..
35-35.9	..	..	..	..	..	..	1.78	1.39	..	..	..	..	..	1.70	..	..	..	1.77	1.55	..
36-36.9	..	..	..	..	..	..	1.84	1.46	..	..	..	..	..	1.75	..	..	..	..	..	..
37-37.9	..	..	..	..	..	..	1.90	1.53	..	..	..	..	..	1.80	..	..	..	..	..	..
38-38.9	..	..	..	..	..	..	1.96	1.60	..	..	..	..	..	1.85	..	..	..	..	..	..
39-39.9	..	..	..	..	..	..	2.02	1.66	..	..	..	..	..	1.90	..	..	..	..	..	..
40-40.9	..	..	..	..	..	..	2.08	1.72	..											
41-41.9	..	..	..	..	..	..	2.14	1.78	..											
42-42.9	..	..	..	..	..	..	2.20	1.84	..											

KETTLEMAN HILLS—55 degrees Gravity and above 1.65 per barrel. *Union Oil Company.
General Petroleum Posts following prices 11-39.9 Gr. 50c, 14-22.9 55c at Kern Front, Fruitvale, Mt. Poso Creek and Rd. Mountain districts.

(See Page 80)

CRUDE OIL PRICE QUOTATIONS (*Continued from Page 79*)

33 to 33.9 gravity	.92
34 to 34.9 gravity	.95
35 to 35.9 gravity	.98
36 and above	1.01

Magnolia Petroleum Company posts in Crane, Upton and Winkler Counties. Southern Crude Oil Purchasing Company posts only in Crane, Upton and Winkler Counties.

HOWARD AND GLASSCOCK COUNTY CRUDE

(Effective April 10, 1930)

Below 25 gravity	$ .65
25 to 25.9 gravity	.68
26 to 26.9 gravity	.71
27 to 27.9 gravity	.74
28 to 28.9 gravity	.76
29 to 29.9 gravity	.78
30 to 30.9 gravity	.80
31 to 31.9 gravity	.82
32 to 32.9 gravity	.84
33 to 33.9 gravity	.86
34 to 34.9 gravity	.88
35 to 35.9 gravity	.90
36 and above	.92

MARKHAM

The Texas Company

(Effective April 11, 1930)

All grades	$ .85

CORSICANA HEAVY

All grades	$ .80

SALT FLAT AND DARST CREEK

All grades	$1.15

SOUTH TEXAS

Mirando	$ .85
Luling	.85

NORTH AND CENTRAL TEXAS

(Effective April 10, 1930)

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona, Lytton Springs, and Van*

Below 25 gravity	$ .72
25 to 25.9 gravity	.77
26 to 26.9 gravity	.82
27 to 27.9 gravity	.87
28 to 28.9 gravity	.92
29 to 29.9 gravity	.97
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.07
32 to 32.9 gravity	1.12
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.255
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.325
38 to 38.9 gravity	1.36
39 to 39.9 gravity	1.395
40 to 40.9 gravity	1.43
41 to 41.9 gravity	1.465
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.535
44 and above	1.57

*Pure Oil Company, July 9, 1930.

GULF COAST

(Effective April 10, 1930)

Grade "A" all companies $1.15

Grade "B"

Below 25 gravity	$1.00
25 to 25.9 gravity	1.03
26 to 26.9 gravity	1.06
27 to 27.9 gravity	1.09
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.15
30 to 30.9 gravity	1.18
31 to 31.9 gravity	1.21
32 to 32.9 gravity	1.24
33 to 33.9 gravity	1.27
34 to 34.9 gravity	1.30
35 to 35.9 gravity	1.33
36 to 36.9 gravity	1.36
37 to 37.9 gravity	1.39

CLASSIFICATIONS OF GULF COAST CRUDE

The Texas Company: GRADE A—Beaume gravity not over 26.0 degrees at 60 degrees Fahrenheit; sulphur not over 0.5 per cent; in distilling 500 cc. of the crude that part of the distillate cut between 65 per cent off and 85 per cent off shall have a pour test of zero or lower. GRADE B—All Gulf Coast heavy crudes which do not meet tests for Grade "A" or for Gulf Coast light.

Humble Oil & Refining Company: GRADE A—All crude conforming to the following tests: viscosity not less than 100 seconds Saybolt at 100 degrees Fahrenheit; sulphur not over .4 per cent; Beaume gravity not over 25 at 60 degrees Fahrenheit. Cold tests of distillates having a viscosity of 1000 seconds at 100 degrees Fahrenheit shall not be over 5 degrees Fahrenheit. GRADE B—Embraces all Coastal crude which does not meet the tests for "A" grade crude.

Gulf Pipe Line Company: GRADE A—Beaume gravity not over 24 at 60 degrees Fahrenheit; viscosity not less than 100 seconds universal Saybolt at 100 degrees Fahrenheit; and sulphur not over 0.4 per cent. The yield of 250 viscosity reduced distillate at 100 degrees Fahrenheit not less than 30 per cent, and this 30 per cent not heavier than 20 Beaume, and its pour test not above zero Fahrenheit. The reduced distillate to be secured by reducing the crude with fire and steam until the bottoms have a flash of not less than 540 degrees Fahrenheit, and not more than 560 degrees Fahrenheit open cup, and the entire distillate obtained in this way reduced to a distillate of 250 viscosity. The 10 per cent cut in the original distillate having an average viscosity of 500 seconds at 100 degrees Fahrenheit to have a pour test not higher than 5 degrees Fahrenheit. GRADE B—Embraces crude which does not meet test for "A" grade.

Sun Pipe Line Company: GRADE A—Viscosity not less than 100 seconds at 100 degrees Fahrenheit Saybolt. Sulphur not over .4 per cent. Beaume gravity not over 25 at 60 degrees Fahrenheit. Cold Test: of distillates having viscosity of 1000 seconds at 100 degrees Fahrenheit shall not be over 5 degrees Fahrenheit A. S. T. M. Method. GRADE B—All Coastal crudes which do not meet specifications for Grade A crude.

38 to 38.9 gravity	1.42
39 to 39.9 gravity	1.44
40 to 40.9 gravity	1.46
41 to 41.9 gravity	1.48
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.52
44 and above	1.54

REFUGIO

(Effective April 10, 1930)

Below 25 gravity (heavy)	.85

REFUGIO (Light)

Same as Gulf Coast 25 gravity and above.

PETTUS

(Effective August 21, 1930)

All grades	$1.15

BRENHAM

(Effective March 1, 1930)

All grades	.95

STATE CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.

Texas—Two per cent of gross value.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 per cent of gross market value.

Montana—Two per cent of gross value at well.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

WYOMING-MONTANA

(Effective April 11, 1930)

Wyoming

Byron	$1.33
Ferris	1.60
Elk Basin	1.55
Grass Creek	1.55
Rock Creek	1.35
Lost Soldier	1.05
Lance Creek	1.63
Mule Creek	1.20
Notches	.65
Big Muddy	1.38
Osage	1.65
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.65
Lander	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

SALT CREEK

Midwest Refining Company

29 to 29.9 gravity	$ .90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 and above	1.23

MONTANA

(Effective Feb. 15, 1930)

Sunburst	$1.65
Cat Creek	1.48
Lake Basin	2.20

NEW MEXICO

(Effective April 11, 1930)

Artesia	1.05
Hog Back	1.43
Maljamar	.95
Jal and Lea	*

(*) West Texas price scale used by The Texas Company and Humble Oil & Refining Co.

CANADA

(Effective June 28, 1930)

Oil Springs	1.95
Petrolia	2.02

LOUISIANA-ARKANSAS

(Effective April 11, 1930)

Homer, Haynesville, Caddo, El Dorado, DeSoto and Crichton and Cotton Valley*

Below 28 gravity	$ .87
28 to 28.9 gravity	.92
29 to 29.9 gravity	.97
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.07
32 to 32.9 gravity	1.12
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.255
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.325
38 to 38.9 gravity	1.36
39 to 39.9 gravity	1.395
40 to 40.9 gravity	1.43
41 to 41.9 gravity	1.465
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.535
44 gravity and above	1.57

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed.

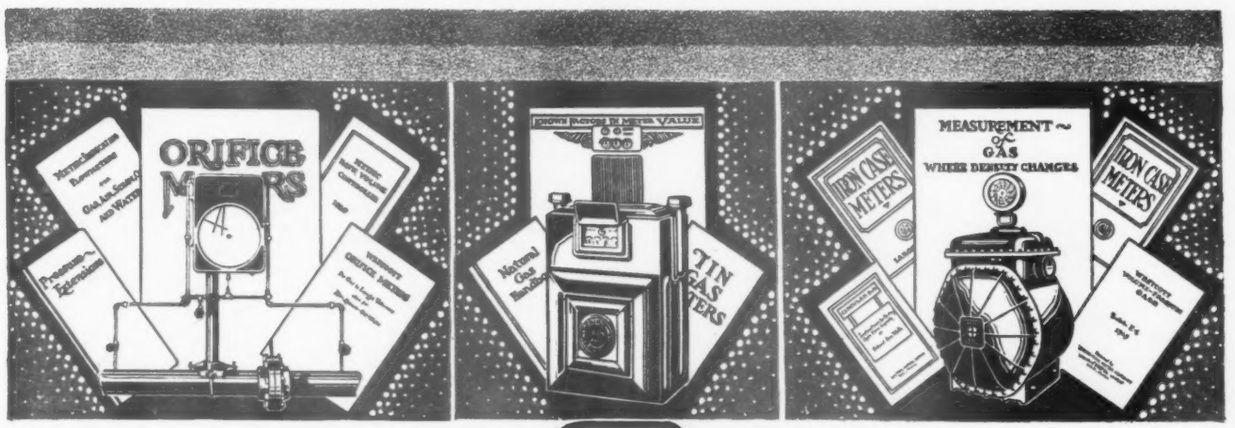
The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS

Below 28 gravity	$ .76
28 to 28.9 gravity	.81
29 to 29.9 gravity	.86
30 to 30.9 gravity	.91
31 to 31.9 gravity	.96
32 gravity and above	1.01

SMACKOVER

Below 24 gravity	$ .90
24 and above	1.05



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AG-4 Recording and Indicating Demand Meters
E-6 Westcott Volume and Pressure Recording Gauge
E-20 Instruction on testing High Pressure Meters
EG-2 Westcott Orifice Meters
E-2 Measurement by Orifice
E-3 Metric Indicating Flow Meters
E-5 Metric Rate-Volume Controller

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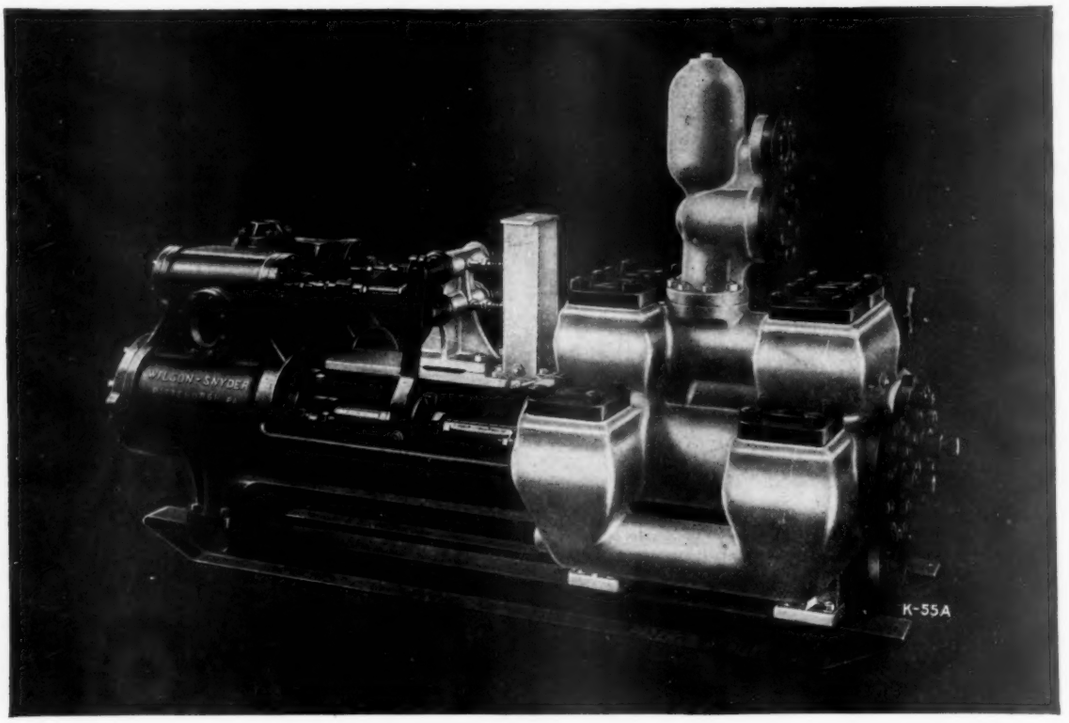

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Oklahoma--Kansas Field Notes

FLOYD L. SWINDELL, *Staff Representative, Tulsa, Oklahoma*

Supreme Court Delays Decision In Proration Suit

OKLAHOMA CITY—After a day of argument the Supreme Court of Oklahoma took the C. C. Julian Oil and Royalty Company writ of prohibition case for later decision. The constitutional question of the right of the Oklahoma Corporation Commission to enforce orders of proration was presented by both briefs and arguments. John Head, attorney for the company, offered arguments in connection of his pleading that the orders of the corporation commission are a misuse of police powers in that they are a subterfuge, since they are for the real purpose of upholding prices, while the plea is that they are to prevent waste.

The question which the court will decide will have bearing on the proration measures of other states, since statutes of curtailment and proration in other states, especially Texas and California, are based on the Oklahoma statute, under which the corporation commission enforces its orders. The contention of the plaintiff was that he had the constitutional right to produce wells in the Oklahoma City field in excess of the amount specified in the proration order, since he had pipe line and refining facilities for using the oil thus produced.

Through C. B. Ames of The Texas Company, W. L. Murphy, Assistant Attorney General of Oklahoma and W. P. Z. German, counsel for Skelly Oil Company, the corporation commission was upheld on the basis that the state had the right to enforce regulations to prevent one property owner from unrestricted production of an oil well, when in so doing it would be detrimental to other oil producers, whose facilities do not permit the unrestricted production of their properties. Several United States Supreme Court decisions were offered in support of this contention.

Ask Abrogation of Writ

The Oklahoma Supreme Court also was asked to end the writ of prohibition, under which the Julian company has been allowed to operate its properties since August 28. Abrogation of the writ was asked, pending final decision of the case.

In his argument before the court John Head made his plea both on the contention of the right of the individual to his property and the further plea that the orders of the corporation commission are not fair as between fields and as between properties within one field. In the first, he said that the state as a whole should be on one basis of proration, while the orders of the corporation commission give one field a proration of 50 per cent of its potential output and other but five per cent of its potential. He contended that the market for the state should be determined and then that each field should have its prorata share of allowable oil.

Judge C. B. Ames outlined the history of curtailment of oil production from the passage of the Oklahoma Common Purchaser Act of 1907 through the naming of the Federal Oil Conservation Board in 1924 down to the adoption of a proration schedule for Texas within the past month. He said the federal government had taken the lead on conservation but had left to each state the problem of setting up the machinery through which proration shall be administered. The Oklahoma statute of 1915 he cited as the first effort to insure each producer in an oil field an equal share of output on a prorated basis, regardless of whether each producer had pipe line facilities and refining capacity. He contended that the ownership of land gave each owner or lessee the right to penetrate the surface in search of oil. The statute he said was set up to insure that each property owner should have his share of oil produced, when transportation facilities were not such that each producer had equality on that basis.

"The question before this court," he said, "is, can the state insure that right?"

Precedents Cited

W. L. Murphy, Assistant Attorney General, offered precedents in three decisions of the United States Supreme

OKLAHOMA CITY.—Showing of the Mid-Kansas Oil & Gas Company and Ramsey Petroleum Company's Messer 1, SW' SW' SW' Section 32-14n-1w, 3½ miles west of Edmond and approximately 14 miles northwest of the south Oklahoma City pool, indicates the finding of another deep sand pool in Oklahoma County. On Monday morning the well was making about 3,000,000 cubic feet of gas and had 1000 feet of 42 gravity oil in the hole. Total depth was 6710 feet. After coring several shows between 6585 and 6668 feet, casing was set at 6700 feet near the top of a sand and sandy shale which had cored a show of oil from 6702 to 6710 feet. Top of the Simpson was reported at 6495 feet which, if correctly correlated, would place the present depth 215 feet into the Simpson formation. The sand at 6702 to 6710 feet has been tentatively called the Wilcox.

The test is located on a block of acreage originally obtained by the Ramsey Petroleum Company which assigned one-half interest to Mid-Kansas Oil & Gas Company for the drilling of a well on the block. In view of the present market conditions and the rigid proration rules now governing the Oklahoma City pool, it is not believed that the new well will precipitate an extensive drilling campaign regardless of the size of its production.

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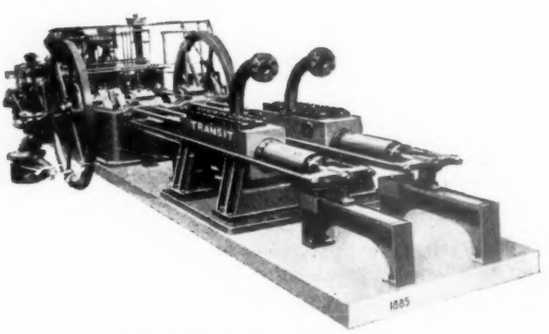

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Court and one decision of the Oklahoma Supreme Court in support of the position that a state may enforce a statute to assure each property the right to a migratory mineral under his property. These decisions, he said, were favorable to the individual even when one or more owners has facilities for making proper use of the resources that matter he pointed out, had not prevented the higher courts from holding that the state could through police powers compel all owners of a common pool of oil to submit to an equitable plan of producing the resource.

W. P. Z. German, counsel of Skelly Oil Company, made the last argument in favor of the statute. In a brief talk he summed up all the argument in support of the statute by pointing out that one or more owners of rights to a common pool of oil could by producing wells in excess of the demand for oil from that pool to the detriment of other producers not so fortunate.

Chief Justice Mason announced at the end of arguments that no further extensions would be granted and indicated that the decision of the court will be given promptly. Thorough briefs were prepared by both sides. The case drew an array of legal talent from within the petroleum industry, as well as attendance from executives of both large and small oil companies in Oklahoma.

The common opinion is that the decision will have vital bearing on the trend of proration in other oil producing states, as well as in Oklahoma.

While the question of the constitutional right of the state to enforce regulations to assure equality in taking oil from a common pool, much that came before the court had to do with methods used in determining proration schedules, methods of enforcing orders and methods of determining the market for oil. The plaintiff contended that unfairness placed the matter on the basis of being promulgated for purposes other than prevention of waste, while attorneys for the state contended that the corporation commission as a fact finding body was justified in determining the market for oil and then determining how that demand should be supplied as between fields of the state.

New Development Continues to Decline in Kansas Fields

Tulsa.—New work continues to decline in Kansas, there being only 14 locations announced during the past week as compared to 19 for the week previous. A majority of the new work is in the Eastborough Estates in the Eastborough pool, 27s-2e Sedgwick County. Eastborough Estates is a sub-division lying to the north and west of production and several of the five tests announced during the past week are located on tracts containing less than two acres. Derby Oil Company's E. B. Rimel 1 NW NE NE Section 30-27s-2e, had the Wilcox sand at 3233 to 3236 feet and was swabbing about 1900 barrels at the end of its sixth day on production. This is the second Wilcox producer in the pool and its initial production exceeds the Vickers Petroleum Company and Hinkle's Keys 1 NEc NW NE Section 30-27s, its west offset, by several hundred barrels.

Mid-West Refining Company's Richardson 36, SEc Section 36-22s-12w, Stafford County, topped a sand at 3541 feet and when drilled to 3544 feet the hole filled 900 feet with 41.8 degree oil. It is drilling deeper. This test is a rank wildcat approximately 36 miles west of Hutchinson, Kansas, in an area which has been little explored.

Study et al's Houry 1, NE NE SW Section 1, 23s-4w, Reno County, Kansas, had the top of the chat at 3256 feet and an estimated 4,000,000 gas at 3419 to 3420 feet. When deepened to 3425 feet, the gas flow increased to 11,115,000 cubic feet with no oil showing. The well is located approximately 11 miles east of Hutchinson, Kansas.

Completions Total 98 for Oklahoma City Field in August

Oklahoma City.—Ninety-eight wells were completed in the Oklahoma City pool and only 17 new locations announced during the month of August. The production for the 31-day period was 3,043,368 barrels, an average of 98,173 barrels per day. The peak for the month was obtained on August 21, when 64 wells produced 152,760 barrels and the minimum was 24,546 barrels from 21 wells on August 10. As of September 1, there were 484 completed wells and a total of 256 operations including drilling wells, rigs, rigging up and locations. Of this number, about 10 were old wells being reworked, making a total of approximately 730.

One of the most interesting features of the structure is the showing of the Prairie, Slick and Phillips Sigmon lease in the southwest quarter of Section 32-11n-2w. The Sigmon 1, which was completed May 16, 1930, and blew wild for several days was opened on August 31 and produced 6355 barrels in 7½ hours along with 84,000,000 cubic feet of gas, flowing under a 300-pound back pressure. Sigmon 2 SW NW SW and Sigmon 6 NE SW SW were completed during the past week for initial gauges of 2580 and 2070 barrels, respectively, both wells being gauged for a period of four hours. No. 2 is a south offset to No. 1 and No. 6 is less than 1500 feet northeast of Prairie Oil and Gas Company's Vincent Sudik 1, NW NW NW Section 5-1n-2w, which will probably be abandoned as a dry hole. In the same part of the field, Indian Territory Illuminating Oil Company's Mary Sudik 11 NW SW SW Section 31-11n-2w, had 700 feet of oil and 4000 feet of water in the hole at a total depth of 6713 feet in the Wilcox.

One of the largest wells for the north part of the field was Wirt Franklin Petroleum Corporation's Lowery 10 NE NW NW Section 12-11n-3w, which came in for 746 barrels during the first hour. Top of the detrital was at 6150 feet and top of the sand at 6293 feet. Total depth is 6465 feet. Denver Producing and Refining Company's Harvey 2 SW SE SE Section 15-11n-3w, farthest producer to the southwest in the central part of the field, ran 350 feet of 5 3/16 inch liner at a total depth of 6657 feet and was making a head about every four hours.

Indian Territory Illuminating Oil Company's Elizabeth Theimer 8 NW NW SE Section 1-11n-3w, was showing a bailer of water an hour at 6757 feet. The well is located near the fault line and it may prove to be on the east side of the fault, although it is a southeast offset to Slick and Atkinson's T. M. Townsend 1, SE SE NW Section 1-11n-3w, which was completed for 9302 barrels at 6495 feet.

Seminole

Tulsa.—Amerada Petroleum Corporation's, and Dixie Oil Company's Chase 1 NW NE SW Section 29-9n-6e, recent discovery in the Greater Seminole area, is producing 3500 to 3700 barrels of oil on gas lift. The new structure, although apparently confined to a small area by dry holes that encircle it, is coming in for a play. Sands Petroleum Company purchased SE SE Section 30-9n-6e, approximately one-half mile southwest, for $500 per acre.

Two sales were reported in township 9n, 5e. John Droppleman et al purchased the W½ SE Section 34 for $24,000 and sold the south 40 acres of the tract to Turman Oil Company at a reported consideration of $20,000 cash and $20,000 in oil. Lippa Drilling Company's Roush 1, NW NE SW Section 20-9n-5e, had the top of the Cromwell sand at 3928 feet, top of the Mayes at 3990 feet, top of the Woodford at 4070 feet, and is drilling below 4130 feet. Clark and Cowden, Rock Island 2 SE SW NW Section 8-9n-5e, had the base of the first Wilcox at 4345 feet, sand at 4348 to 4360 feet, and at 4362 feet in green shale, had 1000 feet of oil in the hole and a show of water.

Ten Umpires Required to Handle Texas Proration Program

Fort Worth, Texas.—Oil field proration umpires are becoming numerous as result of the state-wide production restriction program being put into effect. Indications are that there will be 10 or more jobs of this type, and in some areas the compensation is greater than the salary of the average field superintendent of a large operator. The appointment of an umpire is usually made by the proration advisory committee for the area involved, but in every case the Texas Railroad Commission must pass on the nomination, as the umpire is the authorized agent of the state. However, the oil producing companies share the proration expense on a production basis in each field, or group of fields prorated.

Ray Richmond, umpire for the Yates field and more recently for the Crane-Upton County district also, is the dean of proration umpires in Texas. Richmond was formerly engaged in contract drilling, but stacked all of his rigs to devote his full time to proration work. His success in maintaining a smooth proration enforcement policy in the Yates field has made his services and advice in demand for other areas. Richmond was "borrowed" to set proration in motion in the Judkins field, Ector County.

E. E. Andrews has been proration umpire for the Howard-Glasscock County district since inauguration of production restrictions in August, 1928, and has had a more complicated situation to work with than in any of the old prorated areas because of five separate oil horizons; mixed grades of crude; and almost continuous shrinkage in crude takings by the leading pipe line companies in the face of increased potential production.

A. B. Capers was drafted from the production department of The Texas Company to become umpire for Winkler County on a part time basis following the resignation of R. S. Alsobrook on March 1, 1930. Capers was called upon to aid in installing proration in the Hobbs field, New Mexico, last July, and more recently has been made umpire for Ector County along with his Winkler County duties.

H. H. Fitzpatrick, former deputy supervisor for the oil and gas division of the Texas Railroad Commission, was appointed umpire for the Darst Creek field when proration was instituted voluntarily by operators last January, and has continued in the same capacity since the commission took over proration enforcement of the field. Fitzpatrick's duties were broadened to include Salt Flats field when that area was thrown into proration on August 4.

H. J. Corcoran, formerly president of the Reagan County Purchasing Company, Inc., Fort Worth, has been appointed umpire for the entire Texas Panhandle district. Corcoran is familiar with this district through his former connection with Marland Pipe Line Company, which at one time was very active in the Panhandle.

W. H. Dyer, who has been engaged in drilling contract work and also an oil producer, has been appointed proration umpire for the Central West Texas district, with headquarters at Graham. This district involves many thousands of wells in both shallow and deep horizons, but most of the proration work will be centered on Young County fields, where a number of flush oil areas exist.

R. E. Andrew, former general superintendent of proration for Oklahoma Producing and Refining Corporation of America, Tulsa, has been confirmed by the commission as umpire for the Van field. The bulk of the oil producing area in this field is being developed on a unit plan basis, but proration will apply to the entire field, with separate production quotas given the unitized and non-unitized oil producing leases.

Hobbs Proving "Shoe-string" Type Oil Field
(Continued from page 43)

days later to deepen the hole to 4220 feet, and a re-gauge credited the well with only about 12,000 barrels daily potential. This loss in potential will cause the well to receive a smaller production allowance during the next proration period.

Midwest Refining Company, discoverer of the field, assumed leadership on production allowance for the Hobbs field beginning September 1, having earned a quota of 5900 barrels daily from 15 wells that are located on 13 separate units. This company was credited with a potential output of 58,743 barrels, and obtained 3547 barrels of its production allowance from same, while acreage allowance amounted to 2353 barrels. Amerada Petroleum Corporation dropped from first to second place on production, and has a new allowance of 4269 barrels daily from four wells that scored a combined potential of 58,712 barrels daily, or almost the same as the above company.

An important meeting of the Hobbs field proration committee is to be held in Dallas September 10 that will necessitate the election of a new chairman to succeed Warner Clark, who has been transferred to California. None of the operators with the desired qualifications have volunteered to assume the chairmanship, and it will be necessary for the draft law to be applied. Considerable dissension has arisen lately among the operators in regard to proration, and some of the largest producers have made overtures to the effect that an attempt may be made to disrupt the plan, especially since the field is not to be as large in area as originally expected in some quarters.

HOBBS FIELD, NEW MEXICO, OPERATIONS

Operator—	Drilling Tests	Derricks and Rigs	Locations	Total
Amerada Petroleum Corporation	6	.	1	7
Atlantic Oil Producing Company	2	.	.	2
The California Company	3	.	.	3
The California Company et al	1	.	.	1
Continental Oil Company	6	.	1	7
Empire Gas & Fuel Company	3	.	.	3
Geo. F. Getty Oil Company	1	.	1	2
Gypsy Oil Company	4	.	.	4
Hobbs-High, Inc.	1	.	.	1
Humble Oil & Refining Company	6	.	.	6
Humble-Kirby Petroleum Company	1	.	.	1
Landreth Production Corporation et al	1	.	.	1
Midwest Refining Company	3	3	.	6
Ohio Oil Company	2	.	.	2
Ohio-Independent Oil & Gas Company	1	.	.	1
Prairie Oil & Gas Company	1	1	.	2
Shell Petroleum Corporation	11	.	1	12
Skelly Oil Company	1	.	.	1
Sun Oil Company	2	.	.	2
The Texas Company	4	.	.	4
Texas Pacific Coal & Oil Company	1	.	.	1
Tidal Oil Company	3	.	1	4
Vacuum Oil Company	.	.	1	1
Total	64	4	6	74
Total previous week	62	7	8	77

Chapman Allowance Raised To 11,000 Barrels

Austin, Texas.—Production allowance in the Chapman field, Williamson County, under the current state-sponsored conservation program in Texas has been raised from 9000 barrels daily to 11,000 barrels.

Rusk County Wildcat Presages New Field for East Texas

CORSICANA, Texas.—The nearest approach to a new oil strike in Central East Texas since the establishment of the Van area as a prolific source of high gravity oil was scored on the night of September 5 when C. M. Joiner and associates' wildcat test on the Mrs. Daisy Bradford farm, Rusk County, made a brief flow of oil through drill stem from formation tentatively identified as Woodbine sand at 3536-92 feet. During the interval of approximately 11 months between the Van discovery and this promising strike there has been a total of more than 40 dry holes drilled and completed in the district. This Rusk County wildcat has not been tested sufficiently to place an estimate on its possible oil production, or to classify it as a commercial oil producer, but it has resulted in a scramble being made for lease and royalty protection.

Joiner and associates climaxed several years of desultory efforts to drill to the Woodbine sand formation on the Bradford farm when their wildcat responded with a flow of oil. Bradford 1 was abandoned as a junked hole at 1290 feet, and a similar fate was experienced by Bradford 2, which was abandoned at 2546 feet. These holes were drilled in a cluster about 400 feet from the north line and about one mile from the west line of the Bradford 975-acre farm, Juan Ximinez Survey, being about one mile north of the Henderson-Tyler highway, and about six miles southeast of Overton. The area lies to the southeast of the Van field. Joiner has headquarters in the Marvin building, Dallas.

Casing, storage and well connections were being negotiated for early this week to proceed with the completion of Bradford 3, while in the meantime title requirements that are seldom equalled in volume around a promising oil producer must be cured on the acreage held by the owners of the test in the original lease block. Traces of oil began showing with the rotary returns from the hole middle August, and these showings were encountered at 3536-92 feet, according to Joiner. Several weeks were spent in reaming the hole to set a string of 5 3/16-inch casing. The well has a surface elevation of 395 feet. Pecan and Austin chalk formations were penetrated in drilling the test, but data on these two key formations are conflicting.

Nine new locations on the Van field unitized acreage were authorized during the past week and materials are being assembled to proceed with development work as soon as rotary rigs can be made available from the 20 tests now underway. Pure Oil Company, unit operator, has cemented seven-inch casing on top of Woodbine sand formation on 16 tests, and is drilling in two additional tests. All of these are slated for completion within the next two weeks, although several are in the doubtful class as far as making commercial wells. Pure Oil Company's J. F. Crim (40-acres) 1, located in the north section of the field, and an east offset to a producer, is cementing seven-inch casing after having drilled to 2981 feet. This well tested dry at 2914 feet. Pure Oil Company's B. E. Crim (40-acres) 1, an east offset to the same company's 20-barrel open flow producer on the W. F. Swain (48-acre) 1, logged top of Austin chalk at 2510 feet, and has cemented pipe at a total depth of 2868 feet.

Important Test Pending

Humble Oil & Refining Company's L. A. Dowdle (40-acres) 1, an outpost location on the north end of the field, is one of the most important completions now pending, and the formations are reported to be running low on structure. This test logged chalk at 2565 feet, and has cemented casing at a total depth of 2942 feet. An extension to the Van unitized area west by south is assured by Pure Oil Company's R. A. Howell (25-acres) 1, which encountered chalk at 2296 feet, and casing has been cemented after coring into oil sand at 2639 feet. Pure Oil Company's W. H. Cook (31.1-acres) 1, has been staked to the west of this test. Pure Oil Company's J. T. Taylor (43.8-acres) 1, is located on the east side of the unit, and an offset to Grumbie 1, which is now in process of completion. Other locations were made on leases already under development.

A sharp break in the oil producing area in the northeast section of Van field, and outside the unit, was indicated early this week when The Texas Company's G. W. Carter 2, missed the Woodbine sand after drilling to 2934 feet. Drilling was halted at this depth in Eagle Ford shale. Irregularities shown by this test calls for a new deal on geology of the field, as it is offset to the west and south by two average sized producers. Carter 2 logged Pecan chalk at 1620-1750 feet, and Austin chalk at 2633-2796 feet, steel line measurements.

Completions in the Van area outside the unit were increased to five last week when Pure Oil Company's Ella York 1, an inside location gauged 503 barrels during first 13½ hours flowing through 11/16 and 16/64-inch chokes, with 475 pounds casing pressure and 380 pounds tubing pressure. This well was drilled to 2959 feet, or 2472 feet below sea-level. It logged Pecan chalk at 1520-80 and Austin chalk at 2264-2389 feet. Pure Oil Company's M. F. Shirley 1 is a new location made outside the unit to serve as a north offset to Geo. Anderson and E. E. Fogelson's Sanger (8-acre strip) 1, which was drilled to 2927 feet, and landed tubing to complete this week. The latter operators have moved in derrick to drill on an alleged strip in the southeast corner of Pure Oil Company's Mrs. W. A. York 50-acre lease, or within the unitized area. Hill & Hill, Fort Worth operators, have sold their mineral rights to a town lot in Van to Pure Oil Company after having erected derrick. Pure Oil Company also bought the royalty interests under this tract, and the derrick will be abandoned.

Allen Dome Test Abandoned

Houston.—Mills Bennett Production Company has abandoned Reese 1 at Allen Dome, Brazoria County, in shale at 4215 feet. The company has been running three rigs there. Poole 1 is drilling sticky shale at 2812 feet and Allen 2 is drilling hard sand at 3064 feet.

North and West Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

Proration in North Texas Halts Field Work

WICHITA FALLS, Texas.—Proration enforcement in North Texas has been accompanied by a general cessation of field work in all the older oil areas, and completions have decreased to the lowest volume that has been reached in years. However, wildcat operators have not ceased their activities, and new pools have lately been added to Archer and Young Counties. Difficulty in obtaining pipe line connections for new completions is retarding development work more than the production penalties that are applied to wells that exceed the marginal allowance under the proration plan.

A substantial shrinkage in crude market outlet took place in the North Texas district September 1 when Humble Oil & Refining Company reduced its takings from about 9000 to 5000 barrels daily, while on the same date The Texas Company announced that its takings would be cut from about 20,000 to 16,000 barrels daily. Both companies are respecting the marginal production allowance fixed by the Texas Railroad Commission's proration order in trimming their oil runs from various leases served. Prairie Oil & Gas Company and Sinclair Crude Oil Purchasing Company are the only active major crude buyers in the district that are adhering to their original crude nominations, which formed the basis for the 69,000-barrel daily quota assigned the district by the commission's order for the next 90 days. The latter two concerns are pumping the bulk of their oil runs north to be mixed with other Mid-Continent crudes, while The Texas Company and Humble Oil & Refining Company move their oil to the coast, where cheaper priced oil dominates the market.

Flake and Harmon uncovered a new oil pool for Archer County when their J. A. Bell 1-A encountered sand at 1140-42½ feet, with an estimated daily output of 50 barrels when placed on pump. This wildcat is located about four miles southeast of Archer City, and in Section 14, Block 5, Clark & Plumb Subdivision. Nearby dry holes indicate a small producing area, while no pipe line connections are available. Southeastern Archer County added a new shallow pool when Ray & Johnson's Mrs. C. E. Pruett 1 showed good for 30 barrels of oil daily from sandy-lime at 735-42 feet. This well is in I.&G.N. Ry. Survey, A-239, and is located about 1½ miles northeast of the Prideaux field.

The New Castle shallow oil district is assured another pool to the northwest of the Larimore and Jeffery areas by promising showings made by Maer & Hamilton's S. R. Jeffery 1, which encountered 1,000,000 cubic feet of gas at 700-705 feet, and live oil in sand at 810-12 feet. Pipe is now being lowered to make a production test of the oil formation.

New Outlet for Larimore

A new pipe line outlet for production in the Larimore field is being provided by the construction of about two miles of two-inch line from the producing properties of Young Brothers and associates to a tank car rack near New Castle. These operators have contracted to sell their production to Primrose Refining Company on a month to montth basis at 20 cents per barrel below posted price loaded on cars. This arrangement may jeopardize equitable proration enforcement in the field, which has been assigned a daily allowance of 2500 barrels by the commission's order.

Twelve deep dry holes have been completed in the immediate area surrounding Nash-Windfohr et al's freak producer on the McCloud farm, which opened a new pool in Young County and northeast of Graham with an initial flow of 23,000 barrels oil daily from crevice at 3752-59 feet. Three other tests drilled below this oil horizon, and made only small wells after plugging back.

Deep Oil Development Company's Hirschi 1, located in the Hirschi field in northern Wichita County, has cemented 11-inch casing at 3177 feet, and will probably change from rotary to cable tools to drill to a projected depth of 6000 feet. Hammon & Baird, Duncan, Oklahoma contractors, are drilling this deep test.

Lloyd Oil Corporation et al's Clint Jacobs 2, located in the Jacobs pool, southern part of Cooke County, swabbed 15 barrels oil per hour for three hours from soft sand at 1534-46 feet and saturated lime at 1546-53 feet. This oil is of low gravity, and may be difficult to market with pipe line companies.

Panhandle District Shows 4850-Barrel Production Decline

Pampa, Texas.—Panhandle district contributed a production decline of 4850 barrels during the past week as the forerunner of a series of sharp drops that will follow in line with efforts to prorate all fields to a maximum level of 80,000 barrels daily. H. J. Corcoran, former president of Reagan County Purchasing Company, Inc., has been appointed proration umpire, with offices at Pampa. Enforcement of proration began taking effect September 2. The district averaged 96,545 barrels daily during the past week, including 67,025 barrels from the group of fields in Gray County. The latter registered a production loss of 3710 barrels daily for the week.

Oil production trend in a northwest direction from the Finley-Brown field, Gray County, has been partially halted by Continental Oil Company's Combs-Worley 1 having failed to make a producer in the regular horizon. This test is plugging off hole full water at 2905-16 feet to make a gasser in the upper section of the lime. It is located in the southeast corner of the NE Section 38, Block 3. In the heart of the field, Humble Oil & Refining Company's Combs-Worley 7 has been completed with an initial flow of 1500 barrels of oil and 15,000,000 cubic feet of wet gas at 2743-77 feet, with a total depth of 2820 feet.

Completions have been disappointing in the southeast extension section of the Bower-Jackson field, Gray County. Midwest Exploration Company's J. B. Bowers 2-A swabbed 125 barrels oil during first 12 hours from 3107-63 feet. Phillips Petroleum Company's Bowers 2 is swabbing about 50 barrels daily at 3280-83 feet after plugging back from water at 3287 feet. Magnolia Petroleum Company's Bowers 9, a north offset to the latter, proved a failure after drilling to 3375 feet. Gulf Production Company's Bowers 3 pumped 90 barrels in initial gauge at 3226 feet, while The Texas Company's Bowers 16, a northeast disagonal offset to the latter well, swabbed 30 barrels oil and a like amount of water at 2995-3003 feet, but is drilling ahead below 3100 feet.

North Ector County Producer Opens New Area

SAN ANGELO.—Northern Ector County became assured of its first oil area during the past week when Southern Crude Oil Purchasing Company's wildcat test on the Cowden ranch began making sulphur oil by heads at regular intervals from lime formation at a total depth of 4237 feet. Latest production credits the well with making about 80 barrels of 30 gravity oil daily.

About 18 miles northwest of this wildcat strike the gas volume on Fuhrman Petroleum Corporation's wildcat test on the Ford ranch, Andrews County, increased to about 30,000,000 after drilling to 4168 feet. This gas slowed down operation of the cable tools to such an extent that the owners deemed it necessary to lubricate off the flow early this week. Southern Crude Oil Purchasing Company has seven solid sections surrounding its Ector County producers, thereby lessening the possibilities of a development program being launched.

The well is in the southwest corner of the northwest quarter Section 26, block 43. It will be given a swabbing test at the present depth, as four tanks of 500-barrel capacity each have been erected. Southern Crude Oil Purchasing Company has placed J. E. Ribb in charge of the new area, and a sizeable camp has been ordered built immediately, while the company plans to later build a pipe line to the nearest point on the Texas Pacific railroad to provide its own crude market outlet.

Deeper drilling on the Cowden wildcat may increase the oil yield, as the bottom hole formation softened up at 4231 to 4236 feet. The well began flowing by heads at 4180 feet.

Extension Well Nears Completion

Gulf Production Company's Hutchings 4, located on the south line of Section 7 and about one mile from production on the south end of the Gulf-O'Brien field, Ward County, is drilling below 2765 feet and making about 25 barrels of oil daily along with 12,000,000 cubic feet of gas from broken sandy-lime formation first encountered at 2565 feet. This extension well has been in process of completion for several weeks, and may result in development work being started by lease owners on University fee lands, located in a group of sections less than one mile to the west. In the lower part of Ward County, Atlantic Oil Producing Company and Penn Oil Company's Bennett 1-B is running regular tubing and a string of tapered tubing to develop a flowing well from oil saturated lime at 2550-2607 feet. A string of 2½-inch tubing proved to be too large for the oil supply to maintain a steady flow, so a tapered string of tubing, consisting of ¾-, one- and 1¼-inch pipe, has been ordered installed within the regular string. This procedure will conserve the gas yield, and also enable the well to flow at its maximum rate. Successful results have been obtained with tapered tubing in recent months in a number of West Texas fields.

Proration of the Crane-Upton County district was put into effect on September 5 by Umpire Ray Richmond, with a maximum daily production of 29,000 barrels allotted the various fields and pools. The lower end of the Gulf Production Company's McElroy ranch properties were exempt from proration. The prorated area has a combined potential output of 40,120 barrels daily from 569 wells.

Shallow oil producers in the Howard-Glasscock County district were included for the first time in the proration program of the field beginning September 1, as result of the Texas Railroad Commission having approved the previous recommendations made by the proration advisory committee. According to figures released by Umpire E. E. Andrews, the seven pipe line companies serving the district nominated 22,000 barrels as being their combined daily requirements. The district has 508 wells on the pump, including 287 wells producing from the 1300- and 1800-foot sands. There are 82 wells producing from the 2200-foot lime; 151 wells in the 2500-foot horizon; and 88 producers in the 3000-foot lime. Special production concessions are being made for wells that make an excessive volume of water. The two shallow horizon wells have a marginal allowance of 12 barrels, and the remainder 50 barrels, while the remainder of the market outlet is prorated on a basis of potential.

Coleman County Wildcat

Coleman, Texas.—Wildcat efforts of Arcadia Refining Company and associates on the southwest edge of the townsite of Burkett, located in northeastern Coleman County, yielded a shallow high gravity oil strike on September 3 with an initial production of 365 barrels. This discovery was made with Frank Golson 1, located 2213 feet from the north line and 649 feet from the west line of the J. K. Harris Survey No. 164, and production is coming from the Cross Cut sand at 1576-77½ feet. Most of the dry holes previously drilled in this area were halted at a shallower depth. An important oil pool may follow this strike, but proration rules have a tendency to discourage development work, while pipe line companies are dodging new connections.

Eastland County added an unusual large producer during the past week when Hickory Oil & Gas Company's Terry 1, located east of Cisco, made 400 barrels of oil and 2,000,000 cubic feet of gas on initial gauge after shot of 70 quarts at 3457-91 feet. Warner-Quinlan Company's Hitson 1, located in the Maggie Gray pool, may be deepened after having gauged 29,700,000 cubic feet of gas, with 1400 pounds rock pressure, from top of Ranger sand at 3730 feet.

Atlantic Pipe Line to Build Crude Extension

San Angelo, Texas.—Atlantic Pipe Line Company, Dallas, is constructing a crude line extension, consisting of combination six and four-inch pipe, from its pump station on the north end of the Hendrick field to the Leck-Daugherty field, located in northern Winkler County. The line will be made up of about five miles of six-inch and 3½ miles of four-inch pipe, which will be alternately welded and victaulic coupled.

This extension line will serve Atlantic Oil Producing Company and Joe C. Maxwell's Lum Daugherty 1, which pushed the producing area in north Winkler County about one-half mile to the south with a 12,240-barrel well on August 24 from regular lime formation at 3081 feet. This well earned a proration allowance of 3353 barrels daily for the September period, but was unable to obtain a pipe line connection from the three major pipe line companies that have lines in the field.

Magnolia Buys Smackover Crude

El Dorado, Ark.—Magnolia Pipe Line Company has recently bought 100,000 barrels of Smackover heavy oil from the Simms Oil Company at the regular posted price for delivery at the rate of 5000 barrels daily.

Houston Oil Company is receiving tank car shipments of Bee County, Texas, crude at its Camden refinery at the rate of approximately 900 barrels daily.

Gulf Coast and South Texas Fields

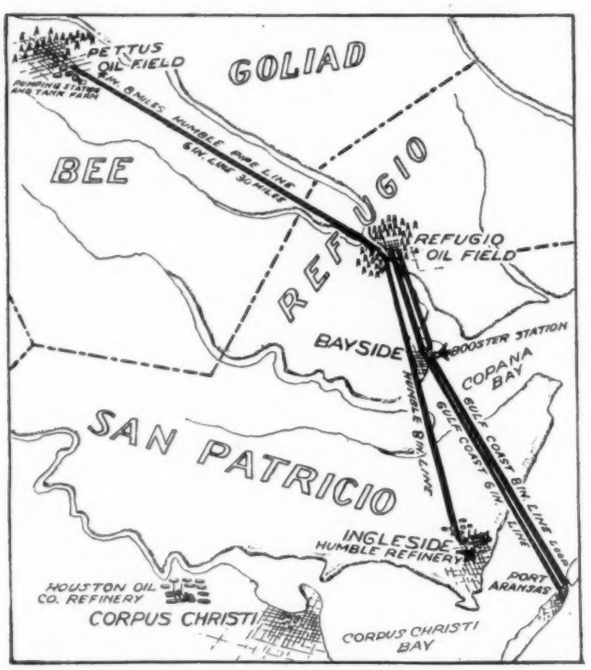
JACK LOGAN, *Staff Representative, Houston, Texas*

Humble Announces Pipe Line Connection for Pettus Field

HOUSTON.—Humble Pipe Line Company is proceeding with work on a pipe line to take oil from the Pettus field, Bee County, the first oil pipe line connection announced for the area. The system will consist of a combination six-inch and four-inch extension from Refugio, a total distance of 38 miles. The company's trunk line from Refugio to its refining and shipping center at Ingleside on the Gulf Coast is a 28-mile eight-inch line, which has been in operation since about May 1, 1930. The extension from Refugio northward to Pettus will consist of 30 miles of six-inch pipe and eight miles of four-inch, the latter on the Pettus end of the line.

This new extension line is expected to be in operation about the opening of November or possibly sooner. Survey for the line is being completed, and a construction office has been opened in Beeville to handle the work. Screw joints will be used in the line. It will have a daily capacity of about 8000 barrels. A pump station with daily capacity of 10,000 barrels is scheduled for immediate construction at Pettus, and two steel tanks are to be built there. Two ditching machines will be used in building the line, one starting from each end and working toward each other.

Although this is the first oil pipe line outlet proposed for the district, a pipe line system for handling gas production at Pettus was started several weeks ago by the United Gas Company, and it is now under construction. That system will consist of an 18-inch line from Refugio to Pettus, while north of Pettus the line will branch off in two directions to connect with the former Magnolia Pipe Line Company trunk line, now owned by United Gas Company, leading into San Antonio, and with the line which United Gas Company built last year from Kennedy and adjacent towns into San Antonio.



Simms Oil Company's Holzmark 1 blew in late Sunday evening, September 7, as the discovery well of the eighth distinct producing pool opened this year in the Pettus district, yielding gas at the estimated rate of 30,000,000 cubic feet daily along with a slight spray of high gravity oil or gasoline. The well is six miles west of the Nichols pool, which constitutes the nearest production, and it is about eight miles northwest of Beeville.

Saturated sand was cored from 3541 to 3547 feet, and on drill stem test the well showed mud and some oil. Eight and one-quarter-inch casing was cemented at 3528 feet, and the well was drilled in Sunday and bailed through the casing. It blew in while bailing was in process. Location of the well in 830 feet from the southeast line and 1240 feet west of the northwest line of the John Lyfford Survey in the J. A. York Survey, Abstract 333.

Six Tests Completed

Half a dozen tests were completed during the past week in various pools and outlying areas of the Pettus field. In the Cosden pool west of the town of Pettus, Houston Oil Company's Newman 2, east offset to Cosden Oil Company's McKinney 2, came in flowing 75 barrels pipe line oil daily through a one-quarter-inch choke after setting of 16 feet of screen in sand at 3689-99 feet. The well will be killed, however, and drilled deeper.

In the Pettus townsite S. R. C. Oil Company's No. 1, Block 19, northwest diagonal offset to Houston Oil Company's well on Block 23, came in yielding 50 barrels of oil through a 5/16-inch choke, showing 1000 pounds working pressure on tubing, the sand having been found from 3850 to 3895 feet. Six and five-eighths-inch casing was cemented at 3847 feet, and a 21-foot joint of screen was set in the sand. Humble Oil & Refining Company's McKinney 6, just outside the townsite, came in for initial production of 192 barrels pipe line oil through a three-eighths-inch choke, with 12 feet of screen in the sand at 3883-95 feet, and total depth of the well 3895 feet. Union Producing Company's Ray 19, east offset to S. R. C. Oil Company's producer in Block 37, came in for 397 barrels production daily through a 9/32-inch choke at total depth of 3929 feet.

Another gas well was added in the pool 1½ miles north of the Pettus discovery oil well when Union Producing Company's Ray 24 in the Pierce Miller Survey tested 15,000,000 cubic feet of dry gas daily through one-quarter-inch choke, working pressure on casing being 425 pounds and on tubing 725 pounds, the producing sand having been found from 2851 to 2870 feet.

Two more failures are credited to the Grayburg area, eight miles west of Pettus. Dr. W. E. Hewitt et al's Mauldin 1, in the J. Pointevent Survey, has been abandoned in shale at 3654 feet, having failed to develop any showings in the prospective producing horizon. Grayburg Oil Company's Kimball 3, on a drill stem test, showed seven four-

bles of salt water, in eight minutes from sand at 3569-73 feet.

Total production of the Pettus district during August aggregated 198,726 barrels from 31 wells, boosting the all-time recovery in the field to 667,768 barrels. For the week ending September 4, the average daily production in the area was 7810 barrels from 32 wells, an average per well per day of 231 barrels. The following table shows the production history of Pettus through August:

Company	Lease	No. Wells	Aug. Prod.	Total Prod.
Barnsdall Oil Company	Roberts	1	4,624	7,840
Baytex Oil Company	Barnett Heirs	1	2,667	3,743
Buchanan et al	Pettus, Block 38	1	12,669	12,669
Weinert et al	Pettus, Block 34	1	1,460	1,460
Cosden Oil Company	McKinney	3	16,879	37,006
Getty Oil Company	Pettus, Block 40	1	*68	*68
Glasscock Brothers	Pettus, Block 24	1	*20	*20
	Pettus, Block 41	1	383	733
Grayburg Oil Company	Kimball	1	...	1,174
Houston Oil Company	Beasley	1	23,761	37,653
	Newman	1	7,896	9,159
	Pettus, Blocks 23-35	2	3,989	3,989
	Pettus, Block 33	1	2,352	2,352
Humble Oil & Ref. Co.	McKinney	5	59,301	245,029
Nichols Oil Corp.	Hicks	1	1,085	4,121
S. R. C. Oil Corp.	Pettus, Block 31	1	*192	*192
Union Producing Co.	Ray	8	53,387	289,567
Total		31	198,726	667,768

Zapata County Test Showing

Laredo, Texas.—Following coring of seven feet of oil-showing sand to total depth of 696 feet, National Oil Company has cemented casing at 688 feet in its wildcat, Adams 2, located in Block 13, Survey 7, Fullerton Subdivision, Share 8, Borego Grant, Zapata County. The plug was scheduled to be drilled about September 10, and if the well fulfills expectations of developing commercial production, it will open a new gas and possibly high-gravity oil field. A sample from the well revealed oil of about 35 gravity. National Oil Company controls most of the acreage around the well, its holdings aggregating several thousand acres, but various Laredo operators have acreage close enough to justify immediate drilling in the event of favorable performance of the National Oil Company test.

National Oil Company has been drilling in that part of Zapata County for more than two years, according to Tom Lillie of Laredo. Its Adams 1 was lost, he said, due to drilling through the second cap, letting in sulphur water. That well had a gas sand at 680 feet which was not tested. It was shut down at that depth for nearly nine months, and after standing for a few weeks the gas worked up through the mud and could be heard blowing for some distance over to the main road to the Muckelroy field. It was drilled to 1185 feet and had three showings: gas sands at 680 feet and below 900 feet, while at 1172-1185 feet a good showing of oil sufficient to justify setting casing was found and might have made a well had it not been drilled too deep. C. J. Webster, president of National Oil Company, said that he did not expect to get oil in the test at 688-696 feet in Adams 2, as he was anxious to bring in a gas well to furnish fuel in preparation for skidding the derrick over to drill another well to the 1172-1185-foot sand.

Test New Liberty County Prospect

Houston. — Rycade Oil Corporation is rigging up on Heiskell 1, first test on a geophysical prospect in southern Liberty County. The location of the test is in the Joseph Dugat Survey, three miles north of Lost Lake dome and about five miles west of Moss Bluff dome. These two latter domes, both producing oil, and three other producing fields, Barbers Hill, six miles to the southwest, Esperson, eight miles to the west, and South Liberty, five miles to the north, form a compact circle around the Rycade Oil Corporation prospect.

Three New Locations in Saxet Area, Nueces County

Corpus Christi, Texas.—Saxet Oil Company's John Dunn 6, discovery oil well of the Saxet field, Nueces County, a few miles west of here, had average daily production of 80 barrels net oil during the week ending September 5, at which time it was flowing 1800 barrels of salt water daily along with the oil. Its producing depth is 4292-4304 feet.

Three new locations have been made in this Nueces County producing area following completion of Houston Oil Company's Morgan 1 as a gas well at 1659-1670 feet. That well is a 350-foot east offset to the Lawrence 2, brought in several weeks ago by R. A. Thompson and G. C. Richardson at the same horizon with pressure of 700 pounds and estimated volume of over 50,000,000 cubic feet of gas daily.

Two of the three new locations were made by Houston Oil Company on the Hunter tract seven miles west of Corpus Christi. One is approximately 300 feet north of the Lawrence 2 gasser, and the other is about the same distance north of Morgan 1, the above mentioned new producer. The third new location is on the McCampbell tract, 1000 feet south of Saxet Oil Company's oil producer, Dunn 6. Derrick is under construction on this location.

Saxet Oil Company has a derrick up on the V. M. Donigan tract, in preparation for drilling No. 2 test, located 2250 feet southeast of No. 1, which came in as a large gas producer with an oil showing early in July of this year.

Refugio Activity Declining

Houston.—Average daily production of the Refugio field during the past week was 27,775 barrels from 146 wells, an average per well of 192 barrels daily.

Two oil wells were completed during the week in the 3700-foot horizon. C. T. Tucker et al's Empson 1 came in yielding 600 barrels fluid, 75 per cent water, on open two-inch line, from sand at 3681-96 feet. Stroube & Stroube's City 1, Block 4, had initial production of 380 barrels pipe line oil on the pump, the producing sand being at 3682-90 feet.

Activity has been on a gradual decline at Refugio during the past several weeks, some of the rigs being moved to Pettus, and there are now only about 30 active tests, as compared with 45 several months ago when the field was at the peak of activity.

Fifth Danbury Test Started

Houston.—Shell Petroleum Corporation has made location for Haury 1, which will be the fifth test to be drilled by that company on the Danbury dome, Brazoria County. The fourth test, Blakely-Winston 4, was recently abandoned at 1850 feet following a test which showed salt water, one joint of screen having been set in the sand. This dome was discovered by seismograph, and the first test proved the dome, encountering salt at about 5225 feet. That well yielded some 20 gravity oil but not in commercial quantity at 1567-77 feet. Subsequent tests have not been successful either in establishing production. The location for the new test, Haury 1, is in the H.T.B. Survey 13.

Orange Well Making 1000 Barrels

Houston.—An exceptionally large well for that field, Sun Oil Company's Gunstream 7 at Orange came in late last week flowing 1000 barrels daily through a one-half-inch choke with 150 pounds pressure from total depth of 3920 feet.

PHYSICAL AND CHEMICAL CHARACTERISTICS OF OIL SANDS

(*Continued from page 42*)

is always detrimental to the best fluid movement and most complete recovery from the reservoir.

Where the sand is irregular in texture, oil may be trapped or rendered unrecoverable in the finer parts of the strata if the propulsive force is due to hydrostatic pressure in gas-depleted areas. The fine-grained sands are more conducive to water coning and capillary retention of oil than are the coarse sands. For example, it is well known to most operators that when a fine-textured oil sand is once flooded by water incursion, it is very difficult or impossible to make the wells produce as they did previous to the ingress of water. This is not so generally true in the coarse-grained sands, as their pore spaces may be large enough to permit gravitational separation of the two liquids if the wells are shut-in for a time. Also, the effect of capillary retention cannot be so great or remain so effective between the large- or coarse-grained sands.

Porosity

Porosity may be defined as the per cent of voids per unit volume. For example, in 100 cubic feet of sandstone of average porosity of 18 per cent, there would be 18 cubic feet of pore space. When we speak of the porosity of an oil sand we ordinarily mean the effective porosity, hence we do not take into consideration subcapillary or unconnected openings.

Voids or interstices in rocks have been classified as, supercapillary, capillary, and subcapillary, depending upon their size.[7] In so-called supercapillary pore spaces liquids obey the ordinary laws of gravity or hydrostatics. In capillary openings or tubes liquids do not obey these laws, but are materially affected by capillary attraction. Water or oil may enter subcapillary pore spaces, but they remain as fixed, prohibiting further entrance of the entraining liquid.

The porosity of oil sands depends upon several physical and chemical conditions: the kind and amount of cementing material present, the hardness or extent to which the rock has been compressed, the shape of the grains, the arrangement of the grains, and upon the uniformity of size of grains. Spheres one-fourth inch in diameter, for example, will have the same per cent of porosity as spheres one-eighth inch in diameter if the arrangement of the spheres is the same in both cases. This characteristic has been investigated by Slichter[8] and others.

Slichter determined that the porosity of uniform spheres varied from 25.9 per cent under the most compact arrangement to 47.6 per cent under the least compact arrangement. In Nature, however, sand grains are not spherical, but occur in a variety of shapes and in all graduations of size. So during sedimentation the small grains may sift in between the larger and possibly more angular grains, thus materially reducing the effective porosity.

While the per cent of porosity is theoretically independent of the size of the grains, the rate at which oil may be recovered is greatly affected thereby, because the larger pores are found between the larger grains. In coarse-grained sands, prevalent in California, high initial production and rapid recovery are common. Wells producing from fine-grained or shaly and limy sands have a much slower rate of recovery but usually a much longer productive life if properly operated.

Variation in the size and shape of sand grains, as well as the character of the cementing material and the amount of compaction cause wide variation in the effective pore space in producing sands. For example, Melcher,[9] under the direction of the United States Geological Survey, determined the following variation in porosity of producing sands from several sections of the United States:

	Porosity
Bradford oil sand, Pennsylvania	15 to 19
Other sands from Pennsylvania	7 to 19
First Wall Creek sand, Wyoming	17 to 26
Newcastle sand, Wyoming	12 to 26
Hickman sand, Burbank, Oklahoma	13 to 33
Bartlesville sand, Oklahoma	12 to 39
Pay sands of North Texas	7 to 29
Pay sands of Texas Gulf Coast	31 to 34
Santa Fe Springs, California	31
Louisiana gas sands	14 to 41

What has been said regarding porosity applies largely to sandstones, sandy shales, sandy limes, and broken sands. The porosity of such reservoir rocks as fissured shales, and jointed and water-channeled limestones in place is a most variable and uncertain quantity, and is indeed quite difficult to determine with any consistency because of the erratic nature of such reservoirs.

[7]Daniel, Alfred—"A Text Book of the Principles of Physics," page 315, 1895.
[8]Slichter, C. S.—"Theoretical Investigation of the Motion of Ground Waters." U. S. G. S. 19th Annual Report, Part 2, 1897-98.
[9]Melcher, A. F.—"Determination of Pore Space of Oil and Gas Sands," Trans. Amer. Inst. Mining & Metall. Engrs., Vol. 65, p. 469-89.

Pierce Junction Gets 500-Barrel Well

Houston. — Gulf Production Company early this week finished Manchester 1 at Pierce Junction as a good producer. It came in flowing 500 barrels of 31 gravity oil daily through a 9/32-inch choke, with 400 pounds pressure, from total depth of 3705 feet.

Aside from the rig used on the above well, there are four active rigs at Pierce Junction. Tilton et al are drilling at 1325 feet in boulders in Gulf Production Company Fee 1 on the northwest side of the dome, location of the test being 21 feet from the south line and 452 feet from the west line of Block 28, W. H. Jones Subdivision, of a 50-acre tract, Section 1028, B.B.B.&C. Survey. Rio Bravo Oil Company's Settegast A-20 is drilling sand at 4055 feet. Saxet Oil Company's Herman Estate 8 is drilling gumbo at 3850 feet. Warner-Quinlan Company's Minchen 1 is drilling sand and boulders at 1079 feet.

Two Wells at Humble

Houston.—Rio Bravo Oil Company has completed two more producers on the west side of the dome at Humble. Fee 5 came in flowing 240 barrels pipe line oil, 32 gravity, through a three-quarter-inch choke from 3732-78 feet, and Fee 6 came in for 475 barrels initial production, 32 gravity pipe line oil, from 100 feet of sand at total depth of 4407 feet.

Missouri-Kansas Adds Three Cities To Service

Chicago.—Missouri-Kansas Pipe Line Company has recently added three additional cities to its natural gas distributing system. Tell City, Indiana, Bowling Green, Kentucky, and Whitesville, Kentucky, now are being served by the company. This makes 27 towns and cities in which Missouri-Kansas Pipe Line Company is distributing natural gas from its own pipe lines.

There are seven in Kentucky, two in Indiana, one in Illinois, seven in Missouri, including Kansas City and 10 in Kansas. The company's principal function is as a producer and transporter of natural gas but at various points in its territory where public demand exists, it also engages in distribution.

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

California May Agree on Allowable of 575,000 Barrels Daily

LOS ANGELES.—The movement to reduce production to 550,000 barrels, after gaining momentum rapidly and promising to find the operators in a fairly receptive mood, has run into a chain of obstacles and it now seems that a compromise allowable of about 575,000 barrels for California will be offered for ratification within the next 10 days. Faced with the period of lower consumption, the committees have been working to reach an agreement among themselves but have been unable to arrive at a definite new allowable to offer operators now producing under provisions of the 596,000-barrel total. Both individual companies and various fields are involved in the problems arising from plans for further cuts, with one group of companies favoring an allowable slightly in excess of the present total, another being partial to 575,000 barrels and a third holding to the theory that only the reduction to 550,000 barrels or less will accomplish the purpose and reduce stocks in the face of a lower consumption.

A veritable maze of problems enter into attempts to lower the allowable to 550,000 barrels, while the intermediate plan of 575,000 barrels also requires cuts in fields which are not willing to suffer further reductions. The individual company angle also must be considered and where the majority of operators are willing to suffer further cuts, the minority counter with the claims that lease provisions will not permit more stringent curtailment measures. The critical fields are already producing in excess of their allowables and, while professing to favor greater cuts, are not anxious for a more drastic reduction. The Playa del Rey field presents a huge problem and curtailment leaders, besides claiming to know no solution to the puzzle, are divided on the best plan to pursue. When the lowest plan of 550,000 barrels is considered, adjustments here and there bring the total to around 600,000 barrels before individual field and company arguments are settled.

Four definite plans have been drawn up for consideration. The allowables in these plans have been placed at 611,500 barrels, 596,000 barrels, 575,000 barrels and 550,000 barrels, with the flush fields in Group One bearing the brunt of the cut. Accompanying these plans is a production summary, showing the state's yield during the latter part of August under the 596,000-barrel schedule.

The two higher plans hold closely to the cuts now in effect, but the 575,000-barrel and 550,000-barrel schedules cut more sharply into both the flush and settled fields. Fields in Group One would be cut 50 per cent under the 575,000-barrel plan, with Kettleman Hills suffering a reduction of 87 per cent, and Playa del Rey a cut per cent while under the more dractic 550,000-barrel plan the flush fields in Group One would be cut 52 per cent from their effective allowable with Kettleman Hills receiving a 90 per cent slash and Playa del Rey faring the same with a 20 per cent reduction. The cuts in the settled fields would range from 10 per cent to 98 per cent under the two lower plans.

Affects Heavier Oils Most

Under the 575,000-barrel schedule, heavy oil would be curtailed slightly more than light oil, while under the 550,000-barrel plan the greatest possible curtailment is asked from all heavy oil fields. Heavy oil is causing most trouble on the market, but since excess light oil brought about present poor conditions it must bear a full share of the burden.

When the committees met to consider the various plans, the more stringent schedules were opposed by members

CALIFORNIA PRORATION SCHEDULES
(Proposed)

Group No. 1—	Effective Potential	% Cut	575,000-Schedule	% Cut	550,000-Schedule
Elwood	85,455	50	42,730	52	41,020
Long Beach	190,940	50	95,470	52	91,655
Maricopa Flat	17,265	50	8,630	52	8,290
Santa Fe Springs	189,200	50	94,600	52	90,815
Seal Beach	35,425	50	17,710	52	17,005
Ventura Avenue	91,070	50	45,535	52	43,715
	Unobtainable	..	1,760	..	.....
Total Group No. 1	609,355		306,435		292,500
Total Group No. 2	433,220	10-98	243,575	10-98	235,015
Kettleman Hills	83,500	87	10,855	90	8,350
Playa del Rey	17,670	20	14,135	20	14,135
Grand Total	1,143,745		575,000		550,000

who were naturally influenced by the desires of their own companies. A few of the larger companies need as much or more oil than they are now producing and are opposed to further cuts where they are producers. On the other hand, at least three major companies have more oil than they need and would be glad to reduce production to dispose of their surplus stocks. As might be expected, failure to agree on a lower plan of curtailment was influenced by the desires of individual fields and operators. Where such varied interests are involved and the needs so changeable, shifting of the allowable constitutes obstacles which are not easily overcome—especially where a much lower total is involved.

The need for a lower allowable has been brought about by several major factors, among which are a consumption lower than anticipated and increased cracking to obtain more gasoline from a given quantity of crude oil. Several companies are cracking oil and obtaining unusually high gasoline recoveries. The operators having large stocks do not find it necessary to crack their heavy fractions, thus placing themselves at a disadvantage over competitors who are making the most out of spot stocks while not being burdened with carrying heavier fractions. Two of the largest operators are carrying the bulk of California stocks, and, while doing some cracking in refinery operations, will be placed at a disadvantage unless inventories are lowered. A lower allowable will increase the practice of cracking, but will also reduce stocks of companies now having both excess production and inventories.

Playa del Rey Troublesome

The rapid rise of the Playa del Rey field and failure to reach an agreement to limit production in this troublesome townlot field is plainly blocking the progress of the whole curtailment plan. Production has jumped here to a higher total than anticipated, with the prospects of an increased flow. Contrary to reports, crude produced in this field does not contain enough sulphur to make treatment of the gasoline difficult. Some members of the committees favor a plan whereby crude from the field will be taken and refined to hold the output in check. Cracking methods are being employed and a high gasoline recovery obtained. A gasoline recovery of 50 per cent is not unusual, and when a base price of about 65 cents for the crude is considered, the finished product may be marketed at a very low figure. The sulphur is fairly well isolated throughout the process and the gasoline is easily treated. Realizing that this field is assuming a menacing aspect, the curtailment committees are giving a large share of their attention to it. A potential here would mean a production almost as large under the present arrangement and it seems that a small cut from the potential is better than none at all. Wide distribution of the oil among independent refiners would have a weakening effect upon the market. A peak production of 50,000 barrels, if thrown on the market as produced, would weaken both the gasoline and crude structures, while a yield half as large, is sold in the usual townlot manner, would weaken the market during the dull winter season.

A compromise on the 575,000-barrel plan should check a rise in stocks during the winter months, even if the present inventories are maintained, but only the reduction of inventories will prompt a return to normal conditions. The mixed nature of the needs of the various companies strongly influences their individual action around the conference table and there is some doubt concerning the feasibility of a cut to 550,000 barrels. As stated several of the companies can use their entire production under the present allowable, while others are anxious to make further cuts to bring about a reduction in inventories.

Completions at Playa Del Rey Indicate Field's Importance

LOS ANGELES.—Completions during the week in the Playa del Rey (Venice) field were the most outstanding since the discovery of the field and showed unmistakably that the area has much greater possibilities than generally believed. Of the four wells finished during the period, three were far above the average and would have been regarded as satisfactory in other flush fields. Both the upper and lower zones were represented in the new completions and it has become evident that either of these sands may yield surprises before the bulk of present drilling wells are completed.

Nelson Petroleum Company completed Venice 1 with an initial production of 2500 barrels from 6145 feet. The oil is 23.1 gravity and shows a negligible cut. A string of 6⅝ inch casing was cemented at 5943 feet and the entire thickness of the oil sand included in the production test, the schist having been found in place.

B. C. Morrison succeeded in placing Venice 2 on production in the shallow zone with the unusually high flow of 1500 barrels of clean oil. A string of nine-inch casing was cemented at 3390 feet and with such a thickness of oil sand the well is showing a very slow decline. This completion was outstanding and removes some doubt concerning the ability of the shallow zone to produce satisfactorily. Gas production was about 2,000,000 cubic feet and both the casing and tubing pressures indicated a slow decline. Venice 2 is the best well yet completed in the upper zone, which was entirely disregarded during the early development of the field.

The central townlot district scored with the completion of Knickerbocker Oil Company's No. 1, which came in with an initial production of 2000 barrels. The well was completed in the deep zone at 6160 feet and is flowing from about 175 feet of oil sand. The oil was 23.6 gravity and showed a cut of four per cent.

Other completions during the week included George F. Getty's Venice, a 400-barrel well at 4120 feet, and Mohawk Oil Company's No. 0-1, which started flowing oil condensate at a 300-barrel rate from an intermediate depth of 5635 feet. The latter is expected to make an oil well when the pressure is partially dissipated.

Nearly a dozen wells are ready for completion in both the upper and lower zones and production probably will jump sharply. The flanks of the structure and the top of the anticline yield the thickest sands, with a thinning out noted as the top of the field is approached. The structure plunges rather sharply to the south but most of the townlot district will be productive.

Although sand and water have given some trouble in a few wells, these problems are not as acute as reported. The decline in producing wells is rapid at first, but after a settled figure is reached the drop is slow.

Locations have been made on nearly every available lot paralleling the beach strip and the field is a typically townlot affair. Active wells and locations total 135, of which 65 are actually making hole.

Long Beach Activity Continues Unabated

Long Beach, Calif.—New locations in the Long Beach field continue to keep pace with completions and there is little evidence that the present drilling campaign will taper off until the average initial production shows a good decline and available locations are reduced. Active projects total 125, of which at least 115 will be completed below

5000 feet. Many of these drilling wells were producers at some level and are being deepened for various reasons. Philip Bixby is drilling a well east of the Los Cerritos sector and outside the producing limits of the field and a successful completion at this point would result in several new locations. The well is about one-fourth mile east of the line of production and near California Avenue and Thirty-Second Street. Increased activity in the southeast part of the field, in a small district south of Signal Hill and across the fault line, has brought the total number of active projects to a high level and new locations, plus the addition of workovers, will maintain about the present pace for several weeks.

Another Well of "Large" Initial Potential is Completed at Elwood

Santa Barbara, Calif.—The Elwood field further demonstrated its remarkable potential during the week, with the completion of Barnsdall Oil Company's No. 88-4 as an 11,000-barrel producer. Coming in with an initial flow of only 1000 barrels in nine hours and ordinarily rated as a 2600-barrel producer, the well was opened up to establish the highest possible potential. Production increased rapidly and soon passed 10,000 barrels. The well was completed at 3395 feet, with 10¾-inch casing cemented at 3095 feet. This is the fifth well completed with enormous initial flows, which were largely abnormal because of the methods employed in conducting production tests.

Pacific Western Oil Company completed Permit 92-7 with an initial production of 4500 barrels but did not open the well as had been done during previous tests. Located favorably on the structure and far out in the ocean, this well probably would have produced twice as much oil if allowed to flow as the company's previous completions in the district were tested. Permit 92-7 was completed at 3515 feet and is producing from below the nine-inch shutoff at 3220 feet.

The Elwood field had yielded several remarkable wells during the past few months, but the unusually high initial flow has been caused by extraordinary production methods. Either the casing or tubing, or both, has been used to allow the oil virtually to roll out of the shallow wells in a few instances. This has established a very high potential but an artificial one. Elwood completions would ordinarily flow from 1500 to 3500 barrels if tested with a sensible bean.

New Kern County Oil Field Looms

Bakersfield, Calif.—Possibility of a new oil field for Kern County looms, with the announcement that Shell Oil Company's Porter Day 1, located in the Weed Patch area, about nine miles southeast of Bakersfield and 4½ miles south of the Edison structure, is flowing oil and water at a 200-barrel rate. The well was drilled to 5370 feet and is in a strictly wildcat territory near the extreme southeast end of the San Juan Valley. It is roughly in line with the Union Avenue and Fruitvale structures, being eight miles southeast of the latter on section 29-30-29. A string of 6⅝-inch casing was run to 5025 feet and a production test made several weeks ago at 5030 feet, but the well showed only a small amount of oil and considerable water. Subsequently additional hole was made with much more satisfactory results. The most recent production test showed a cut of 40 per cent but such a high percentage of water in a purely wildcat test does not condemn the well. Hardly a commercial producer in its present status, the well proves an accumulation in the district and is regarded as an important discovery.

Complete 6000-Barrel Well on North Dome at Kettleman Hills

COALINGA, California.—The completion of Superior Oil Company's Huffman 1, with an initial production of 6000 barrels is the most outstanding development in the Kettleman Hills field since the discovery of the field three years ago and is sure to be the forerunner of an extensive drilling campaign on the North Dome. Located three miles northwest of the discovery well and fully two miles from the nearest producer, the new well proves the North Dome to be productive along a strip at least nine miles long. The flow of gas was about 100,000,000 cubic feet. The oil was 45 gravity, or considerably heavier than any previously found on the North Dome, and very clean. It carried a brownish cast and apparently showed the influence of a position on the flank of the structure.

Huffman 1 is the deepest producer in the Kettleman Hills field, having been completed at 8323 feet. A string of 13⅜-inch casing was cemented at 5895 feet, but the final shutoff was effected with 9⅝-inch casing at 7050 feet. This gives the well 1273 feet of formation in the Temblor and dispels all doubt concerning the ability of the sand to flow a heavier oil in large quantities. A seven-inch oil string was landed on bottom, including 800 feet of perforated. This was cemented through perforations at 7368 feet, thus allowing the well to produce only from a part of the sand below the 9⅝-inch shutoff. The 4¾-inch tubing was run to 7000 feet.

Completion of such a well at this great depth and on the north plunge of the North Dome is of tremendous importance and is a distinct point in favor of arguments that the field will ultimately prove to be ostensibly an oil field and not a gas producer. This great flow of light oil indicates that the bottom of the Temblor sand and the flanks of the structure will yield a much heavier oil than early completions indicated. The well proved a sensation because of its location and depth. It is located in Fresno County and the first completed across the line on the North Dome. Limited storage and the absence of a pipe line will force at least a temporary shutin of the new producer, which is located on fee land and not strictly bound by provisions of the curtailment agreement now in effect.

Completion of Superior Oil Company's Huffman 1 has changed the plans of several operators holding leases near the new producer and proves several tracts which were held as questionable blocks. Tentative plans for drilling offsets to Huffman 1 and other tests under way have been made and the most recent completion will undoubtedly bring about actual development of fee land on the northwest plunge. Amerada Petroleum Company made a location on Section 29-21-17 but suspended operations to await the outcome of Huffman 1.

This most recent completion revives the question of gas waste and producing of the well will increase the field waste, which is already exceeding 300,000,000 cubic feet. No provisions have been made for treating the gas and waste at Huffman 1 will incur the loss of a tremendous quantity of natural gasoline.

Huffman 1 proves the North Dome at Kettleman Hills to be a producer of the first magnitude, and while it may be principally a gas field, the fact that the oil contains between 75 and 90 per cent gasoline is very important. The heavier oil produced in Huffman 1 reduces the quantity of gasoline but facilitates handling.

Louisiana--Arkansas Field Notes

North Louisiana's New Upper Trinity Zone Showing Salt Water

SHREVEPORT. — North Louisiana's newly opened upper Trinity oil producing horizon at 1800 feet on the southwest flank of the old Bellevue shallow field of Bossier Parish is showing salt water but whether the water is coming from the Trinity or a faulty casing above had not been definitely determined Sunday, September 7.

Harry I. Morgan and Shreveport-El Dorado Pipe Line Company's Kendricks 2, SE SW Section 22-19-11, first completed as a 15,000,000 foot gasser and then suddenly doubling its gas output and starting a flow of oil, was first gauged for 24 hours as flowing 495 barrels of 50 gravity oil through a half-inch choke with a working pressure of 670 pounds from depth of 1800 feet with eight feet (correct) of sand at bottom of the hole. On Tuesday, September 2, the well began to show salt water and is now flowing an estimated 500 barrels of salt water along with 300 barrels of oil daily through three-quarter-inch choke. The gas yield has also decreased and the well is now making but a little gas. A northern offset has been spudded in and is drilling below 475 feet. The region which lies between two producing areas in the Nacatosh encountered in Bellevue at the 300-400-foot level is extremely faulted. Several gassers in the Trinity had been completed there before but no previous oil had been found. Standard Oil Company of Louisiana owns the oil rights to the 1100-acre tract the well was completed upon, the operators completing the test having only the gas rights.

The possibility of the Blossom sand becoming a pay horizon in the Cartersville field of Bossier Parish, appeared during the last week when The Texas Company's Pine Woods Lumber Company A-1, Section 25-23-12, blew out at 2672 feet making an estimated 15,000,000 cubic feet of gas from four feet of sand. Six-inch casing had been set at 2650 feet. The drill stem was still in the hole when the blow-out occurred and the hole cratered for a diameter of approximately 75 feet. The gas is now decreasing. Gas found heretofore in the Cartersville field has been in the Woodbine around 3000 feet and the oil in another stratum of the same zone at the 3100-3200-foot level. However, an oil field six to seven miles east of Cartersville in Sarepta district of Webster Parish is producing from the Blossom.

Extension of the Zwolle east field of Sabine Parish, Louisiana, slightly over one mile due east appeared probable with encountering of an eight-foot break in the chalk rock at the 2200-2500-foot zone at 2407 feet in Huber and Mann's Newton 1, NW NE SW Section 25-8-12, which is making some oil. Total depth is 2417 feet, 74 feet of hard white chalk having been topped at 2333 feet after plug was drilled following cementing of 6⅝-inch casing at 2260 feet. This well checked exactly 105 feet higher than A. H. Tarver and Shreveport-El Dorado's Sabine State Bank 3, Section 26-8-12, the eastermost producer in that part of Zwolle.

Zwolle West Extension Promising

In the west part of Zwolle, a mile west of production, R. L. Gay, Trustee's Sabine Lumber Company 1, Section 15-7-14, is also checking very high having encountered Marlbrook marl at 2116 feet, the last foot of this formation showing oil. Six and five-eighths-inch casing was set at 2104 feet with total depth of 2270 feet. Gay's discovery well in this area, the first and only Zwolle producer completed in the Nacatosh sand above the marl and chalk has total depth of but 2130 feet. Elevations are practically the same.

Two miles west of Pelican Natural Gas Company's four-mile east and one mile south extension well, Louisiana Long Leaf 3, Section 4-7-11, in the Zwolle east field, the same company has abandoned Sabine Lumber Company 3, Section 6-7-11, as a salt water hole in the Blossom sand at 2821 feet, having topped the Blossom at 2816 feet. The well showed breaks in the chalk rock but bailed dry in that formation each time it was tested. Marlbrook marl was topped at 2225 feet, six-inch casing being set three feet above. Surface elevation was 259.9 feet. The same company has made location for its fourth test on the same lease in Section 11-7-12. In Section 4-7-11, Loring Oil Company (Benedum and Trees) have derrick patterns laid for Garner 1 and Trammel 1.

A. C. Glassell and associates' Pittsfield Plantation 1, Section 41-8-10e, Concordia Parish, Louisiana, in the east central part of the state and in wildcat territory, which showed 6,000,000 to 10,000,000 feet of gas and considerable salt water at 1453 feet about three months ago, has been re-opened but drill stem was twisted off. The well is gassing again but whether the present hole can be saved is problematical. This test early in the summer when it first showed the gas in what has been identified as the Jackson formation resulted in a considerable geological and geophysical exploration throughout Central Louisiana extending into southeast Texas. Considerable acreage was leased by several major companies which sent crews of geophysical men into the area to work. Glassell, with whom unconfirmed reports have it the Louisiana Gas & Fuel Company, is part owner, has 150,000 acres surrounding his test under lease and he subsequently leased probably as much east of the Mississippi River opposite Concordia Parish in Adams and Wilkinson Counties in Mississippi. His first test completed recently in Wilkinson County, however, was disappointing as it was abandoned as a dry hole at total depth of 4017 feet in what Mr.

Glassel identified as the Jackson. He is drilling at 2180 feet in his Adams County test, Stowers 1, Section 28-8-2w.

Lincoln Parish Test Abandoned

Arkansas Fuel Oil Company after plugging back to 4256 feet testing salt water at total depth of 4292 feet in Lewis and Company 1, Section 26-20-4w, Lincoln Parish, Louisiana, 10 miles northeast of the upper Trinity zone gas field recently opened in the Sugar Creek area of Claiborne Parish, tested dry at 4256 feet and permit has been taken out to abandon the test. Six and five-eighths-inch casing was set at 4234 feet. Triangle Drilling Company, which has the two Trinity zone gassers in Sugar Creek, has just cemented nine-inch casing at 3952 feet in Cox Fee 1, Section 6-19-5w, Claiborne Parish.

Joe Burnham and associates' Hood 1, Section 30-11-14, a wildcat in southwest DeSoto Parish, tested dry with a show of oil at 2352 feet with eight feet of sand and are waiting orders.

Anderson and associates have junked and abandoned Buck 1, Section 7-15-17, Ouachita County, Arkansas, 2½ miles northeast of the Mount Holly field, at 2723 feet. Six miles north of Mount Holly, Graves Brothers have blocked acreage of about 2000 acres and have derrick up for a test in Section 9-14-18. Arkansas Valley Gas Company has made location for Turner 1, SE SE Section 27-5n-30w, Scott County, Arkansas, a wildcat, and Lavaca Oil & Gas Company has made location for Moore 1, NW SW Section 27-8-30w, Sebastian County. Malloy & Company are rigging up for Burns 7, Section 31-17-15, Union County. These new tests with four workovers in Smackover comprise the last week's projects in Arkansas, except for Wilson and Chapman's J. T. Arnold A-1, NE SW Section 24-15-16 in the same section where the same operators completed two small producers during the last week.

Natural Gas Products Company which several months ago completed the first gasser in the Trinity at the 4400-4600-foot zone in Panola County, East Texas, has set 6⅝-inch casing at 4400 feet in Tom Moore 3, B. C. Jordan Survey, an offset to the Trinity gasser. Bell and associates drilling Burnett Lumber Company 1, S. B. Hendricks Survey, a wildcat in Panola County, cored a sandy shale showing oil and are arranging to set eight-inch casing at 2075 feet for a test. Texas-Louisiana Production Company has spudded in Lawrence 1, Harrison Davis Survey, in the same county, a wildcat test, and are drilling below 500 feet after setting 10-inch casing at 160 feet. John C. Rodgers has spudded in Lanier 1, K. A. Welborne Survey, Cass County, Texas, and is drilling ahead after setting 10-inch casing at 100 feet. G. R. Ridgeway has derrick up for Parker 1, Jesse McKelvey Survey, Shelby County, another wildcat test.

Purchase of Loreco by Cities Service Neither Denied or Affirmed

Shreveport.—M. J. Grogan, president, Louisiana Oil Refining Corporation, will neither affirm nor deny reports that Cities Service Company is contemplating purchase of the holding of the former company.

"I am awaiting information as to the date of the next meeting of the company executives, which must come from the New York office," Mr. Grogan said.

Arkansas Natural Gas Corporation officials also would not confirm the reports. It is known that Cities Service representatives have recently been checking properties of Louisiana Oil Refining Corporation in this territory. The company owns two refineries here and has a distributing and sales system reaching from Southwest Texas to Georgia, with production in Arkansas, North Louisiana, Oklahoma and Darst Creek, Texas.

News from Rocky Mountain States

Interesting Tests Are Planned for Wyoming

Casper.—There are several interesting wildcats starting up in Wyoming. In the northeastern corner of the state, in Crook County, a test is to be drilled on Pearson Dome by the Horth interests of Detroit. Acreage was blocked up by a group of Casper men and turned over to the Detroit operators for development. In the same county Casper Petroleum Syndicate will drill a test to the Tensleep sand, expected around 800 feet, on what is known as Ilsley Dome. The Pearson Dome test expects to find production in the Sundance at 600 feet and the Tensleep at 1500 feet. Standard drilling equipment is to be used.

In the western part of the state Yellowstone Oil Company, financed largely by Lander capital, will make a test which is to be drilled two miles northeast of the town of Shoshoni. Diamond core drilling is under way to determine structural conditions.

On the Powder River structure, northwest of Casper, in Natrona County, Cuyler Oil Company has spudded in and set surface pipe for its test to the Muddy sand expected around 2200 feet. This structure is semi-proved, Midwest Refining Company having drilled a well to completion there in 1925, and having shut in a production of about 26 barrels of high grade crude. Other wells drilled on Powder River are recognized now to have been off structure.

Southwest of Casper but a few miles Summit Oil Company is drilling a test on the Trevett ranch. The test was drilled to 505 feet more than a year ago, and is now being cleaned out and cemented before drilling is resumed.

Montana Gas Supply Greater Than Demand

Butte, Mont.—Dr. Eugene S. Perry of the Montana State School of Mines says that the state's natural gas supply is far greater than the demand. He said that the Baker-Glendive district is becoming outstandingly important, having already developed some 300,000,000 cubic feet of gas per day. He pointed out that the new gas field east of the town of Red Lodge, in Carbon County, Southern Montana, promises to supply gas for a long time to come, and that those two fields, together with the Kevin-Sunburst gas area, have tremendous reserves of gas. The only problem, he said, is to find a market.

Plan Gas Pipe Line From Cut Bank Field to Seattle

Great Falls, Mont.—Announcement was made last week by interests associated with the Jos. Drumheller operations in the Round Lake district, north of the town of Cut Bank, where gas wells have recently been completed, that a plan was being considered for the construction of a gas pipe line from the Cut Bank field to the city of Seattle. Such a line would cost about $50,000,000. It would follow the Roosevelt highway west over the Rocky Mountains, and would serve the town of Kalispell, then pass west through the Coeur d'Alene mining district, through Spokane, Wenatchee, and adjacent towns on its way to the coast. It will be of 20-inch pipe. An extension from the main line to serve Missoula is a part of the plan. Applications for franchises have already been made.

Gas territory lies north of the town of Cut Bank and was

That concave side

Means dollars saved for You

Fig. 1

Just pick up a V-belt that is built with the ordinary **straight sides** and bend it as it bends when it goes around a pulley. Here is what you will see:

As the belt bends, its top **narrows**, its bottom **widens**, and the sides of the belt **bulge out**. (See figure 1). This shape does not fit the sheave groove—and there are two disadvantages:

(a) The bulging produces uneven wear along the sides of the belt and (b) the full side of the belt is not uniformly gripping the pulley —a definite loss in transmission efficiency.

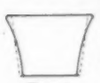


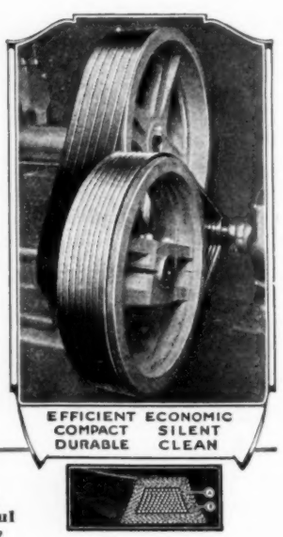
Fig. 2

Now bend, in the same manner, a Gates Vulco Rope—the belt with the **concave** side (patent pending). As this belt bends, you will see it assume the shape shown by dotted lines in figure 2. This shape exactly fits the sheave groove—with two important results:

(a) The wear is evenly distributed and this means longer life and (b) the entire side of the belt uniformly grips the pulley and this means full delivery of power.

PATENTED CONSTRUCTION

A core of strong endless cords (to give the belt strength) with a bias cut cover (to protect the core and stand long wear) are both Gates Patents. United States patents 1,354,738 and 1,400,539 protect the principle and the construction of a V-belt having a center of endless cords with a bias cut cover.



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discovered and proved by three wells, the first of which was drilled and is now being produced by the Drumheller interests. Texas production Company recently completed a well gauging 15,250,000 cubic feet and having a rock pressure of 750 pounds. The Sandpoint-Berger interests have a shut-in gasser which had an initial production of 8,000,000 feet awaiting a market.

Discover Shallow Pool in Southwestern Wyoming

Kemmerer, Wwo.—Cretaceous Oil Company has discovered what is apparently a new high gravity shallow oil pool in the southwestern part of Wyoming, in Dry Piney Basin, 10 miles north of the La Barge field. In drilling for water the well unexpectedly drilled into a production of about 15 barrels per day of high grade crude oil. Well is now being drilled deeper.

Billings Gas Company Seeks New Franchise

Billings, Mont.—Billings Gas Company, local subsidiary of Ohio Oil Company, is asking for natural gas franchises in Livingston and other towns in the Gallatin and Yellowstone Valleys in Montana. The company proposes to expand its Billings system to take in these additional towns. Expenditures for the enlarged system will probably total some $2,500,000.

The present supply of gas is mainly from Elk Basin, lying partly in Wyoming and partly in Montana. A new supply in addition is now assured from the Dry Creek structure 50 miles south of this city.

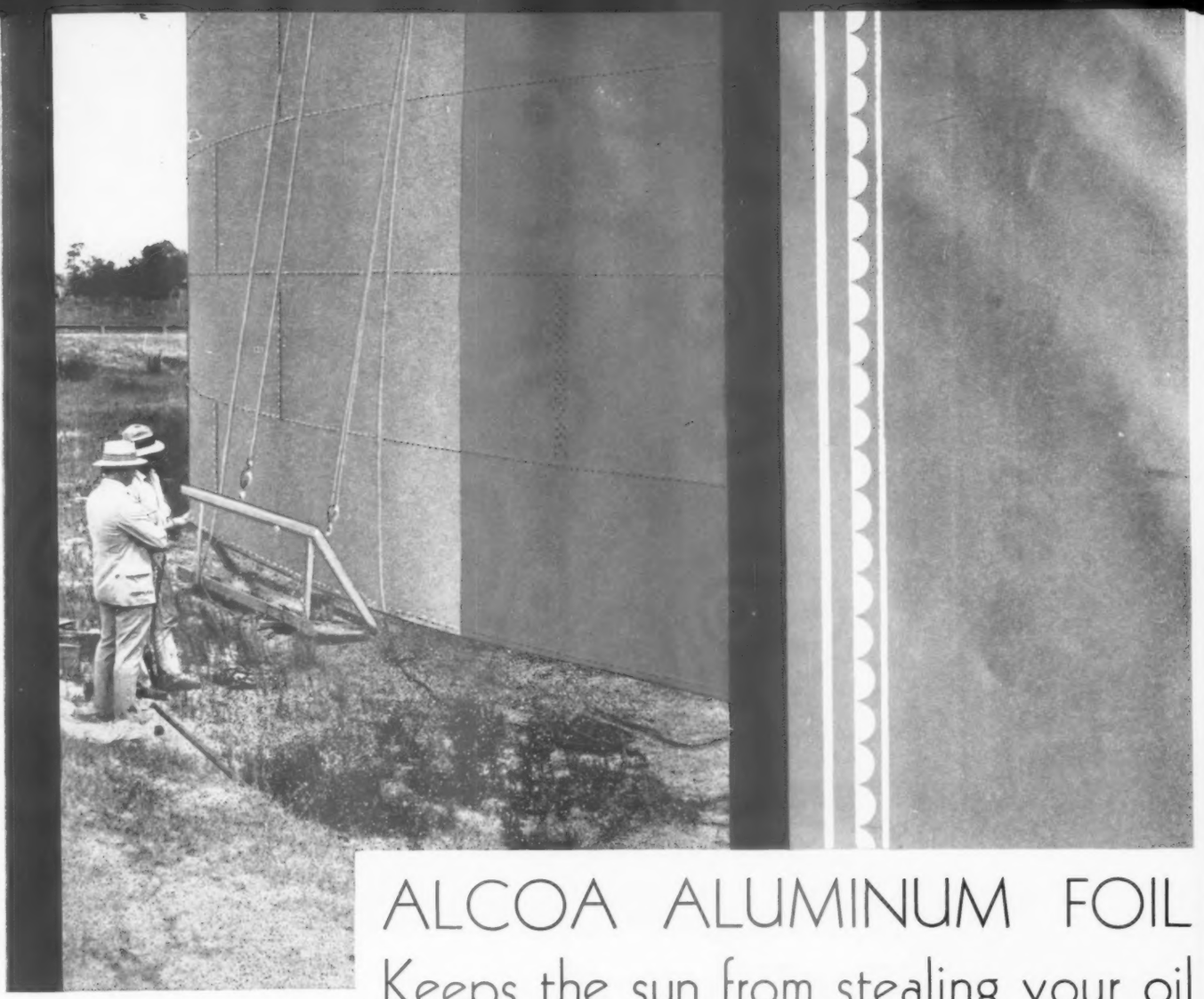
Red Lodge, Mont.—Ohio Oil Company apparently has a new light oil field in Carbon County, Southern Montana, east of this town. The location is on Northern Pacific railway land. Hole is drilling at 5515 feet, more than 100 feet in the Dakota series. Oil is of high gravity and the sand is heavily saturated. Wells head up every day and flow more than 65 barrels each head. Gravity of the crude is from 38 to 40 degrees Baume. This is the second well in the field, the first having been saved as a gas well; it has an open flow of 15,000,000 cubic feet from the Frontier sand at 4400 feet.

New Black Oil Discovery in Pitchfork

Cody, Wyo.—New black oil discovery proved by the joint test of Honolulu Consolidated Oil Company of San Francisco and Producers & Refiners Corporation is good for more than 250 barrels of heavy black oil; it is the Pitchfork structure in the southern part of Park County, about 42 miles directly south of this town.

Santa Barbara Well to be Re-Tested

Santa Barbara, Calif.—Valmont Oil Company has cleaned out Birdie-Cline to bottom and will again test this Santa Barbara Mesa well at 2120 feet. A string of 8¼-inch casing was originally run to 1945 feet and tubing will run for the ensuing production test. A study of the log of this well reveals about 165 feet of oil sand and shale, of which nearly two-thirds showed oil. If the well fails to flow, it will be placed on the pump. The test is regarded as an important development, having been drilled between two faults which cross the district. Nearer the ocean the boom of a year ago failed to develop commercial production, although about 40 wells were started and drilled to the shallow sand.



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Every year thousands and thousands of barrels of oil are lost through evaporation. Tanks are heated by the sun —oil and profits are drawn off into the air.

Alcoa Aluminum Foil is effectively blocking these losses. Used on tanks and tank cars, it reflects the sun's heat and keeps the oil at a much lower temperature.

Alcoa Aluminum Foil is easily and quickly applied. It costs only a little more than painting. It gives a surface that is practically permanent. Over a period of years its value will lie not only in checking evaporation losses but also in protection against corrosion. It prevents the formation of rust on both tanks and tank cars.

Crews without previous experience soon master the art of applying foil. It goes on like wall paper.

Alcoa Aluminum Foil also protects pipe line coatings from effect of soil stresses.

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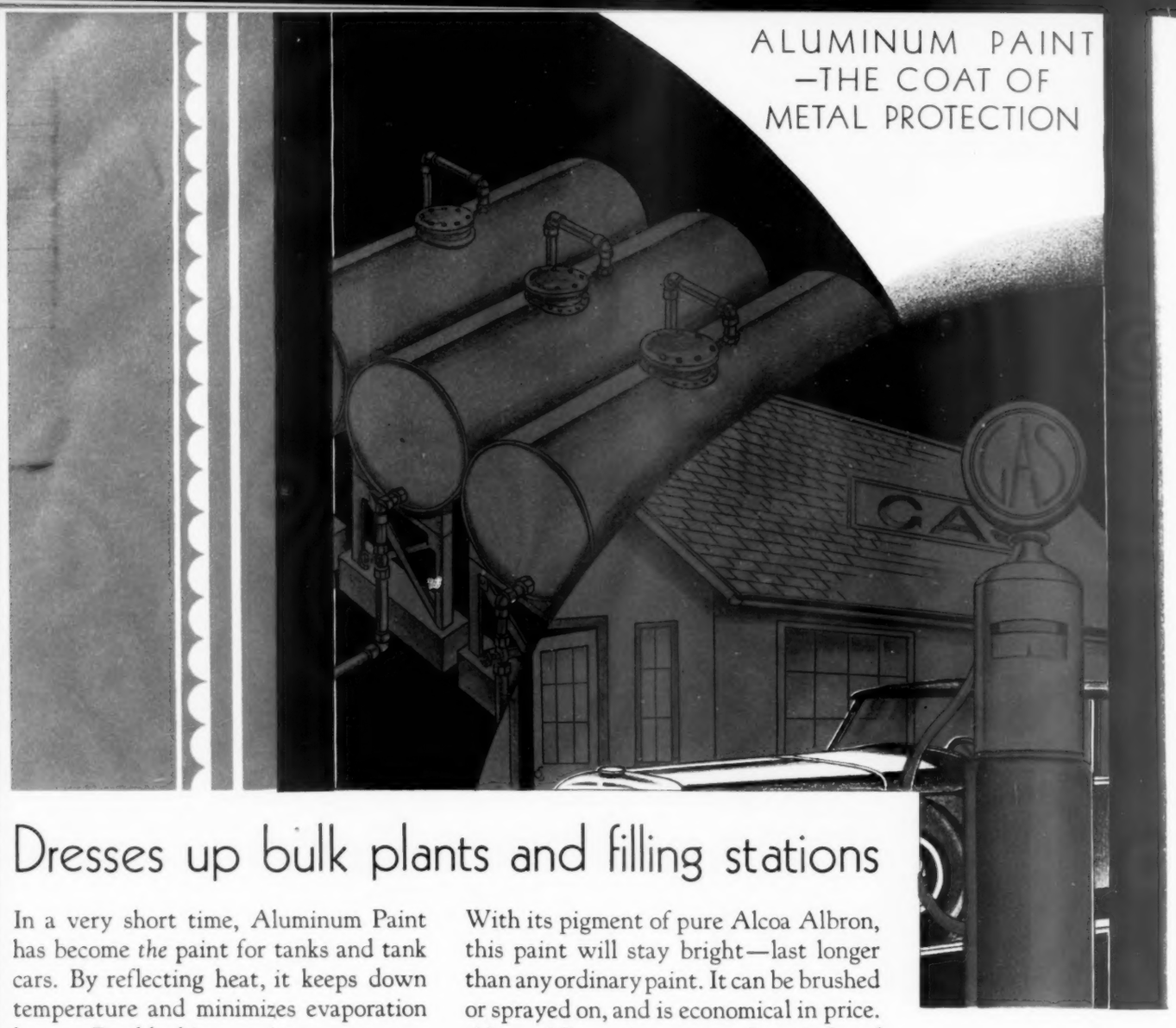

Dresses up bulk plants and filling stations

In a very short time, Aluminum Paint has become *the* paint for tanks and tank cars. By reflecting heat, it keeps down temperature and minimizes evaporation losses. By blocking moisture penetration and the action of sulphide fumes, it checks corrosion and the formation of rust.

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Summary of Field Operations for August 1930

RECAPITULATION—UNITED STATES

	Completions	Producers	Gas wells	Failures	Initial Production Oil	Initial Production Gas*	Total Prod.
Oklahoma	335	199	38	98	823,853	738¾	17,363,500
Kansas	105	33	29	42	14,770	148½	3,586,700
Texas (outside Gulf Coast)	477	250	47	180	198,292	969	20,096,850
Gulf Coast	176	106	1	69	58,358	1	6,406,750
North Louisiana	87	20	32	35	6,039	662¼	1,285,750
Arkansas	24	8	2	14	720	1¼	1,709,700
Eastern States	548	240	161	147	7,228	250¼	3,986,200
Rocky Mountais	a	a	a	a	a	a	3,282,800
California	85	74	..	11	50,795	....	18,946,100
Total for August	1,837	930	310	597	1,160,055	2,771¼	76,664,350
Total for July	2,144	1,167	306	671	845,068	3,085½	78,230,450

*Millions of cubic feet.
aNot available.

NEW YORK

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Allegany	8	8	..	..	20	..
Total	8	8	..	..	20	..

PENNSYLVANIA

Allegheny	3	2	..	1	8	..
Butler	9	5	..	4	33	..
Greene	9	..	5	4	..	2¼
Washington	8	3	4	1	50	2¼
Bradford	41	41	..	..	212	..
Center-Middle	5	4	1	..	10	¼
Clairion	11	5	4	2	11	3¾
Venango	10	6	2	2	12	1
Total	96	86	16	14	336	9¼

CENTRAL OHIO

Ashland	12	3	5	4	85	5¾
Athens	12	..	7	5	12	4
Belmont	4	..	2	2	..	½
Coshocton	4	3	..	1	166	..
Cuyahoga	1	..	1	..	..	1¾
Fairfield	3	..	2	1	..	5¾
Guernsey	4	3	..	1	180	..
Hocking	6	1	2	3	10	½
Holmes	4	1	2	1	200	1¾
Knox	6	..	3	3	..	1
Licking	10	9	1	..	413	½
Lorain	4	..	1	3	..	2¼
Medina	10	4	3	3	62	1
Muskingum	15	6	7	2	279	3½
Perry	9	5	4	..	113	4¾
Richland	1	..	1	..	..	1¾
Stark	1	..	1	..	..	1¼
Summit	3	..	3	..	..	6¾
Tuscarawas	8	3	2	3	174	1½
Wayne	2	..	..	2	..	..
Total	119	38	47	34	1,694	43¾

SOUTHEASTERN OHIO

Monroe	6	2	3	1	7	¾
Morgan	6	..	5	1	..	1¼
Noble	7	3	2	2	9	½
Washington	7	3	3	1	11	¾
Total	26	8	13	5	27	3¼

NORTHWESTERN OHIO

Allen	2	2	..	..	50	..
Auglaize	1	1	..	..	7	..
Crawford	1	..	..	1	..	..
Hancock	2	1	..	1	30	..
Hardin	6	2	3	1	55	1¾
Mercer	2	1	1	..	10	¾
Sandusky	1	1	..	..	7	..
Wood	1	..	..	1	..	..
Wyandot	1	..	1	..	..	¼
Seneca	1	1	..	..	40	..
Total	18	9	5	4	199	2¼
Total Ohio	163	55	65	43	1,920	49¼

WEST VIRGINIA

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Boone	9	4	5	..	28	1½
Braxton	1	..	1	..	..	½
Cabell	1	..	1	..	..	¼
Calhoun	14	3	10	1	17	10½
Clay	6	2	2	2	22	2
Doddridge	1	..	1	..	..	¼
Fayette	1	..	1	..	..	¼
Gilmer	6	..	2	4	..	½
Jackson	1	1	..	..	4	..
Kanawha	4	..	2	2	..	2¼
Lewis	1	..	1	..	..	½
Lincoln	1	..	1	..	..	¼
Logan	3	..	1	2	..	½
Marion	1	..	1	..	..	¼
Marshall	1	..	1	..	..	2
Mingo	1	..	1	..	..	1
Monongalia	3	1	1	1	4	½
Nicholas	1	1	..	..	8	..
Parson	1	1	..	..	2	..
Ritchie	11	1	2	8	2	1¼
Roane	10	2	8	..	2	6¼
Tyler	2	..	..	2	..	..
Wayne	2	1	1	..	2	¾
Wetzel	1	..	..	1	..	..
Wirt	2	1	1	..	10	¼
Wyoming	1	..	1	..	..	2
Total	86	18	45	23	101	33

KENTUCKY

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Allen	1	1	..	..	200	..
Breckenridge	1	..	..	1	..	..
Clay	2	..	2	..	..	1¼
Cumberland	1	..	..	1	..	..
Daviess	26	20	3	3	915	1¾
Hancock	2	1	1	..	80	1¼
Henderson	12	9	2	1	145	2¼
Johnson	4	4	..	..	16	..
Lawrence	2	2	..	..	13	..
Lee-Owsley	1	1	..	..	4	..
McLean	13	5	1	7	550	¼
Muhlenberg	1	1	..	..	5	..
Ohio	54	27	11	16	1,110	9¼
Warren	4	1	..	3	80	..
Wayne	2	2	..	..	12	..
Webster	1	..	1	..	..	¼
Total	127	74	21	32	3,130	16¼

INDIANA

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Floyd	1	..	..	1	..	..
Gibson	1	..	..	1	..	..
Hamilton	1	..	..	1	..	..
Pike	10	2	5	3	65	8½
Sullivan	1	..	..	1	..	..
Huntington	1	..	1	..	..	1
Randolph	1	..	..	1	..	..
Steuben	1	1	..	..	2	..
Warrick	1	..	..	1	..	..
Total	18	3	6	9	67	9½

ILLINOIS

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Crawford	7	4	..	3	48	..
Edgar	1	1	..	..	1	..
Monroe	2	..	..	2	..	..
Randolph	1	..	..	1	..	..
St. Clair	3	2	..	1	50	..
Wabash	5	1	..	4	110	..
Lawrence	3	1	..	2	5	..
Total	22	9	..	13	214	..

MICHIGAN

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Barren	2	..	..	2	..	..
Cass	1	..	..	1	..	..
Isabella	8	6	2	..	1,400	9
Muskegon	1	1	..	..	40	..
Newyago	2	..	..	2	..	..
Ottawa	1	..	..	1	..	..
Total	15	7	2	6	1,440	9

MISSISSIPPI

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Wildcats	13	..	6	7	..	123½
Total	13	..	6	7	..	123½
Total Eastern States	548	240	161	147	7,228	250¼
Total production Eastern States						3,986,200

MISSOURI

St. Charles	2	..	..	2	..	..
St. Louis	2	..	..	2	..	..
Total	4	..	..	4	..	..

OKLAHOMA

Caddo	6	1	3	2	78	84¾
Carter	8	7	..	1	7,135	..
Cleveland	2	1	..	1	25,800	..
Coal	1	..	..	1	..	..
Comanche	2	..	..	2	..	..
Cotton	2	2	..	..	16	..
Creek	26	13	3	10	1,045	4¼
Grady	2	..	..	2	..	..
Hughes	8	..	4	4	..	168
Jefferson	3	3	..	..	87	..
Kay	1	..	..	1	..	..
Latimer	2	1	1	..	20	17
Lincoln	7	1	1	5	5,374	11
Marshall	11	7	..	4	266	..
McIntosh	4	..	3	1	..	1
Murray	1	..	..	1	..	..
Muskogee	19	4	3	12	85	3¾
Okfuskee	10	8	1	1	543	15
Oklahoma	78	75	1	2	739,529	342½
Okmulgee	15	9	1	5	292	1½
Osage	29	16	5	8	1,306	13¾
Pawnee	5	3	1	1	26	2¾
Payne	4	1	1	2	15	12
Pontotoc	6	5	..	1	910	..
Pottawatomie	16	11	..	5	14,537	..
Roger Mills	1	..	..	1	..	..
Seminole	41	27	1	13	26,614	2
Stephens	6	1	2	3	25	22
Tulsa	4	2	..	2	135	..
Wagoner	10	1	4	5	15	10
Noble	1	..	1	..	..	17
Pittsburgh	1	..	1	..	..	5
Texas	1	..	1	..	..	5½
Washita	1	..	..	1	..	..
Woods	1	..	..	1	..	..
Total	335	199	38	98	823,853	738¾

KANSAS

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Butler	14	5	..	9	1,000	..
Chase	1	1	..	..	20	..
Chautauqua	1	..	1	..	..	½
Coffey	4	1	..	3	35	..
Cowley	5	1	3	1	70	2¾
Edwards	1	..	1	..	..	7
Elk	3	..	..	3	..	..
Ellis	3	2	..	1	605	..
Greenwood	11	4	1	5	960	1¾
McPherson	9	6	1	2	5,335	10
Morris	2	..	..	2	..	..
Morton	14	..	14	..	..	77¼
Reno	1	..	..	1	..	..
Rice	8	1	..	7	725	..
Riley	2	..	..	2	..	..
Russell	4	3	..	1	430	..
Sedgewick	10	7	..	3	5,530	..
Stevens	7	..	7	..	..	49
Sumner	1	1	..	..	30	..
Woodson	2	1	1	..	30	¼
Rooks	1	..	..	1	..	..
Rush	1	..	..	1	..	..
Total	105	33	29	42	14,770	148¼

KANSAS PRODUCTION SUMMARY

	Barrels
Greenwood	589,400
Florence	23,250
Peabody	79,100
Eldorado	430,750
Augusta-Fox-Bush	84,450
Rainbow Bend	33,000
Voshell	303,100
Russell	100,150
Churchill	114,450
Oxford	83,650
Sedgewick	597,900
Others	1,147,500
Total	3,586,700

OKLAHOMA PRODUCTION SUMMARY

	Barrels
Braman	102,300
Blackwell	93,700
Hubbard	45,400
Thomas	21,250
Tonkawa	205,650
Garber	139,900
Burbank	483,200
Osage	793,450
Cushing	415,750
Yale	243,500
Davenport	37,200
Bristow	474,450
North Okmulgee	322,000
South Okmulgee	220,550
Cromwell	233,500
Papoose	79,050
Wewoka	113,600
Seminole	466,450
East Seminole	72,850
Bowlegs	446,950
Searight	235,750
Little River	743,100
East Little River	401,800
Earlsboro	652,350
East Earlsboro	514,850
Duncan	299,750
Graham	101,550
Fox	36,550
Healdton	370,150
Hewitt	220,550
Scholem-Alechem	430,400
Pearson	21,600
Oklahoma City	3,100,750
Mission	210,850
Carr City	196,600
Asher	37,950
Sasakwa	173,700
St. Louis	760,950
Allen	468,700
Maud	117,200
Logan County	147,750
West Asher	199,000
South Earlsboro	317,150
Konowa	537,400
Others	2,056,400
Total	17,363,500

CALIFORNIA

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Elwood	5	5	..	..	10,900	..
Long Beach	33	33	..	..	11,635	..
Maricopa Flats	1	1	..	..	25	..
Midway-Sunset	2	2	..	..	400	..
Piru	1	1	..	..	275	..
Potrero	5	3	..	2	925	..
Richfield	2	2	..	..	310	..
Round Mountain	4	4	..	..	1,175	..
Santa Fe Springs	4	4	..	..	750	..
Venice	11	11	..	..	15,425	..
Ventura	2	2	..	..	4,375	..
West Coyote	1	1	..	..	450	..
Wildcats	10	1	..	9	550	..
Kettleman Hills	1	1	..	..	3,000	..
Mt. Poso Creek	1	1	..	..	200	..
Newhall	1	1	..	..	200	..
Orella-Capitan	1	1	..	..	200	..
Total	85	74	..	11	50,795	..

CALIFORNIA PRODUCTION SUMMARY

	Barrels
Inglewood	539,800
Midway-Sunset	1,975,000
Ventura	1,477,000
Seal Beach	629,700
Elwood	1,339,300
Kettleman Hills	430,100
Santa Fe Springs	3,359,500
Huntington Beach	881,900
Dominguez	310,000
Playa Del Rey	188,000
Others	4,607,000
Long Beach	3,208,800
Total	18,946,100

MOUNTAIN STATES PRODUCTION SUMMARY
WYOMING

	Barrels
Salt Creek	895,850
Grass Creek	64,750
Elk Basin	24,750
Big Muddy	57,650
Lost Soldier	83,500
Rock Creek	65,550
Lance Creek	3,900
Oregon Basin	91,400
La Barge	58,950
Others	143,850
Total	1,490,150

MONTANA

	Barrels
Cat Creek	35,650
Sunburst	181,350
Pondera	69,450
Others	1,550
Total	287,000

COLORADO

	Barrels
Moffats	35,850
Fort Collins	39,750
Florence	13,150
Others	49,250
Total	138,000

NEW MEXICO

	Barrels
Table Mesa	3,100
Artesia	21,700
Hogback	14,300
Rattlesnake	40,500
Balance Lea and Eddy Counties	1,284,600
Others	3,450
Total	1,367,650
Total Mountain States	3,282,800

ARKANSAS PRODUCTION SUMMARY

	Barrels
El Dorado	130,350
Champagnolle	139,750
Smackover, Light	158,100
Smackover, Heavy	1,156,250
Stephens	28,950
Nevada	31,100
Lisbon	29,450
Others	35,750
Total	1,709,700

ARKANSAS

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*
Ouachita	6	2	..	4	58	..
Union	7	3	..	4	133	..
Wildcats	11	3	2	6	529	1¼
Total	24	8	2	14	720	1¼

NORTH LOUISIANA

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*	Monthly Prod.
Bossier	13	6	3	4	614	14½	.....
Caddo	8	6	..	2	242	..	.....
Carterville	..	..	..	..	..	..	111,000
Cotton Valley	..	..	..	..	..	..	62,100
De Soto-Red River	..	..	..	..	..	..	95,000
Haynesville	..	..	..	..	..	..	147,300
Holly	..	..	..	..	..	..	33,200
Homer	..	..	..	..	..	..	108,600
La Salle	1	1	..	..	30	..	.....
Morehouse	4	..	4	..	..	48¾	.....
Ouachita	7	..	6	1	..	65¾	.....
Richland	15	..	15	..	..	494	.....
Sabine	10	2	1	7	23	16	.....
Union	1	..	1	..	..	1¾	.....
Urania	..	..	..	..	..	..	162,650
Zwolle	..	..	..	..	..	..	142,950
Wildcats	28	5	2	21	5,120	21½	.....
Others	..	..	..	..	..	..	52,150
Total	87	20	32	35	6,039	662¾	1,285,750

LOUISIANA GULF COAST

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*	Monthly Prod.
Avoca	1	..	..	1	..	..	.....
Anse La Butte	1	..	..	1	..	..	.....
Bayou Bouillon	1	1	..	..	825	..	13,550
Bay St. Elaine	1	..	..	1	..	..	.....
Black Bayou	2	..	..	2	..	..	.....
Caillou Island	1	..	..	1	..	..	.....
East Hackberry	2	2	..	..	4,000	..	97,950
Edgerly	3	2	..	1	65	..	13,500
Evangeline	3	2	..	1	85	..	65,300
Four League Bay	1	..	..	1	..	..	.....
Hackberry	3	2	..	1	120	..	36,300
Hager Dome	1	..	..	1	..	..	.....
Jefferson Island	2	..	..	2	..	..	.....
Lake Barre	..	..	..	..	..	..	37,300
Lake Pelto	1	..	..	1	..	..	.....
Lockport	2	1	..	1	200	..	93,650
Port Barre	2	..	..	2	..	..	111,850
Sorrento	..	..	..	..	..	..	3,100
Sulphur	4	2	..	2	1,080	..	103,000
Sweet Lake	1	1	..	..	1,000	..	35,700
Vinton	5	5	..	..	2,965	..	186,050
Wildcats	6	..	..	6	..	..	.....
Others	..	..	..	..	..	..	78,150
Lake Grande Ecaille	1	..	..	1	..	..	.....
Starks Dome	1	1	..	..	420	..	.....
White Castle	..	..	..	..	..	..	9,600
Total	45	19	..	26	10,760	..	885,000
Total Louisiana	132	39	32	61	16,799	662¼	2,170,750

TEXAS GULF COAST

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*	Monthly Prod.
Alleyton	1	..	..	1	..	..	.....
Austin Bayou	1	..	..	1	..	..	.....
Barbers Hill	13	12	..	1	5,605	..	570,550
Batson	1	1	..	..	325	..	35,000
Big Creek	4	2	..	2	1,200	..	127,600
Blue Ridge	2	2	..	..	1,290	..	51,450
Boling	..	..	..	..	..	..	33,050
Clay Creek	1	1	..	..	300	..	44,300
Cove	1	..	..	1	..	..	.....
Damon Mound	1	..	..	1	..	..	.....
Devers	1	..	..	1	..	..	.....
Esperson Dome	5	3	..	2	525	..	80,100
Fannett	1	..	..	1	..	..	26,500
Goose Creek	2	..	..	2	..	..	143,400
Hankamer	1	1	..	..	1,000	..	74,100
High Island	1	1	..	..	210	..	.....
Hockley	1	..	..	1	..	..	.....
Hull	8	8	..	..	1,690	..	259,150
Humble	14	12	..	2	9,130	..	649,450
Lost Lake	1	1	..	..	75	..	.....
Markham	1	1	..	..	55	..	.....
Moore's Field	2	2	..	..	1,250	..	.....
Moss Bluff	1	..	..	1	..	..	.....
North Dayton	2	..	..	2	..	..	.....
Orange	1	1	..	..	1,050	..	.....
Orchard	..	..	..	..	..	..	68,100
Pettus	25	13	..	12	4,500	..	198,700
Pierce Junction	5	5	..	..	10,075	..	396,750
Port Neches	1	1	..	..	725	..	62,450
Raccoon Bend	3	3	..	..	1,230	..	372,250
Refugio	10	8	..	2	1,733	..	906,300
San Felipe	1	..	..	1	..	..	.....
Saratoga	3	3	..	..	130	..	31,000
Sour Lake	1	1	..	..	200	..	69,250
South Liberty	..	..	..	..	..	..	113,400
Spindle Top	8	5	1	2	4,100	1	513,800
Sugar Land	1	1	..	..	1,200	..	371,400
West Columbia	..	..	..	..	..	..	130,300
Yarboro	2	..	..	2	..	..	.....
Wildcats	3	..	..	3	..	..	.....
Others	..	..	..	..	..	..	76,450
Lolita	1	..	..	1	..	..	.....
Total	131	87	1	43	47,598	1	5,521,750

TEXAS PANHANDLE

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*	Monthly Prod.
Carson	7	2	4	1	100	123½	279,100
Donley	1	..	..	1	..	..	.....
Gray	42	33	3	6	27,385	93½	2,136,450
Hutchinson	7	1	5	1	60	93¼	654,850
Moore	1	..	1	..	..	25	.....
Motley	1	..	..	1	..	..	.....
Potter	1	..	1	..	..	38	.....
Wheeler	8	..	8	..	..	202¾	19,400
Others	..	..	..	..	..	..	10,750
Total	68	36	22	10	27,545	575¾	3,100,550

TEXAS RECAPITULATION

	Completions	Producers	Gas Wells	Failures	Initial Pro. Oil	Initial Pro. Gas*	Monthly Prod.
Panhandle	68	36	22	10	27,545	575¾	3,100,550
Southwest	102	82	12	8	29,122	258	3,016,600
North	83	35	..	48	1,904	...	2,267,650
East	1	...	1	..	...	2¼	.....
West	60	40	..	20	35,842	19	8,829,650
East Central	26	18	..	8	100,620	2	1,235,200
West Central	137	39	12	86	3,259	112	1,647,200
Total (Outside Gulf Coast)	477	250	47	180	198,292	969	20,096,850
Texas Gulf Coast	131	87	1	43	47,598	1	5,521,750
Total Texas	608	337	48	223	245,890	970	25,618,600

*Millions of cubic feet.

SOUTHWEST TEXAS

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*	Monthly Prod.
Brooks	1	..	1	..	..	23	.....
Bexar	6	6	..	..	1,444	..	.....
Caldwell	1	..	..	1	..	..	.....
Chapman	9	9	..	..	8,645	..	251,200
Dale	..	..	..	..	..	..	9,300
Darst Creek	7	7	..	..	4,940	..	1,416,600
Duval	3	1	2	..	15	40	.....
Roma	1	..	1	..	..	..	.....
Laredo District	..	..	..	..	..	..	425,900
Luling	..	..	..	..	..	..	293,300
Lytton Springs	..	..	..	..	..	..	27,400
Nueces	4	2	2	..	625	85	.....
Salt Flat	2	2	..	..	..	..	524,500
Somerset	..	..	..	..	..	..	48,900
Webb	8	3	2	3	210	40	.....
Williamson	6	6	..	..	8,900	..	.....
Zapata	51	46	3	2	4,343	50	.....
Zavalla	1	..	1	..	..	20	.....
Others	..	..	..	..	..	..	19,500
Goliad	1	..	..	1	..	..	.....
Val Verde	1	..	..	1	..	..	.....
Total	192	82	12	8	29,122	258	3,016,600

NORTH TEXAS

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*	Monthly Prod.
Archer	37	16	..	21	715	..	488,050
Burkburnett	..	..	..	..	..	..	222,250
Clay	4	1	..	3	40	..	.....
Cooke	9	3	..	6	220	..	.....
Denton	1	..	..	1	..	..	.....
Electra	..	..	..	..	..	..	354,300
Grayson	2	..	..	2	..	..	.....
KMA-Iowa Park	..	..	..	..	..	..	171,300
Montague	2	..	..	2	..	..	304,450
Wichita	16	10	..	6	785	..	.....
Wilbarger	10	5	..	5	144	..	673,500
Wise	1	..	..	1	..	..	.....
Others	..	..	..	..	..	..	53,800
Foard	1	..	..	1	..	..	.....
Total	83	35	..	48	1,904	..	2,267,650

WEST CENTRAL TEXAS

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*	Monthly Prod.
Brown	7	2	..	5	15	..	186,700
Callahan	5	..	..	5	..	..	99,900
Coleman	6	2	..	4	150	..	92,100
Comanche	3	1	1	1	5	1¾	.....
Eastland	10	3	6	1	254	75¾	168,850
Erath	1	..	1	..	..	½	.....
Hood	1	..	..	1	..	..	.....
Jack	4	1	1	2	80	22	76,450
Palo Pinto	5	2	1	2	13	1¾	15,500
Shackelford	11	6	..	5	555	..	217,600
Stephens	5	2	2	1	22	10¼	173,500
Throckmorton	3	..	..	3	..	..	24,800
Young	76	20	..	56	2,165	..	542,650
Others	..	..	..	..	..	..	50,150
Total	137	39	12	86	3,259	112	1,647,200

EAST CENTRAL TEXAS

Boggy Creek	..	..	..	..	..	..	88,900
Corsicana-Powell	..	..	..	..	..	..	173,400
Currie	..	..	..	..	..	..	10,550
Mexia	..	..	..	..	..	..	139,550
Nigger Creek	..	..	..	..	..	..	6,150
Richland	..	..	..	..	..	..	6,300
Van Zandt	19	18	..	1	100,620	2	783,950
Wortham	..	..	..	..	..	..	26,400
Wildcats	7	..	..	7	..	..	.....
Total	26	18	..	8	100,620	2	1,235,200

EAST TEXAS

Panola	1	..	1	..	..	2¼	.....
Total	1	..	1	..	..	2¼	.....

WEST TEXAS

	Completions	Producers	Gas wells	Failures	Initial Oil	Prod. Gas*	Monthly Prod.
Crane	5	5	..	..	4,125	..	1,214,350
Crockett	1	1	..	..	350	..	70,050
Ector	5	5	..	..	4,343	..	305,750
Fisher	6	5	..	1	1,688	..	.....
Howard	..	..	..	..	..	..	626,650
Jones	..	..	..	..	..	..	41,600
Mitchell-Scurry	1	1	..	..	75	..	66,450
Pecos	13	12	..	1	21,781	16¼	107,300
Reagan	1	1	..	..	160	2¼	673,900
Upton	3	3	..	..	2,410	..	.....
Ward	4	4	..	..	775	..	.....
Winkler	..	..	..	..	..	..	2,274,700
Yates	..	..	..	..	..	..	3,204,650
Wildcats	20	2	..	18	75	..	.....
Others	..	..	..	..	..	..	144,250
Irion	1	1	..	..	60	..	.....
Total	60	40	..	20	35,842	19	8,829,650

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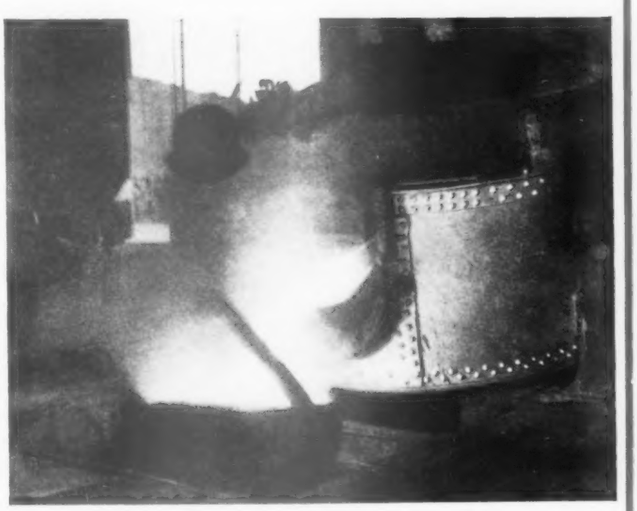

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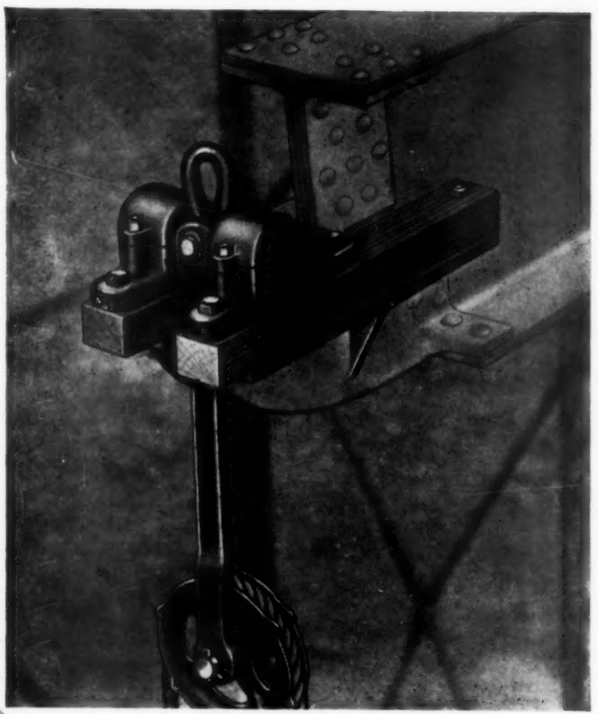
HOUSTON - TEXAS

"Build With Steel Castings"

RATIGAN No. 42 Beam Saddle Hanger



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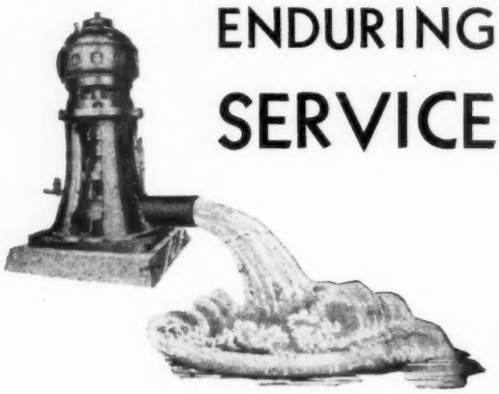

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BOILER TUBES

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CADDO COUNTY—		
Mid Kansas O&G and Ramsey Pet. wade 9, sw c se sw 2-5n-9w	275	4092
CARTER COUNTY—		
Magnolia Pet. Co., Brady 1, sw se sw 13-1s-3w	40	2271
J. H. Hudson, Hooks 1, se sw sw 13-1s-3w	50	2350
F. W. Merrick, Inc., Mitchell 1, se nw se 24-1s-3w	1920	2445
Texas Co., Eaves 3, ne se sw 24-1s-3w	340	2450
CREEK COUNTY—		
Ted Ray Oil Corp., Baker 1a, ne nw ne 14-17-10e	20	1950
Shell Pet. Corp., Bruce 8, se sw ne 10-17-9e	15	2041
Olean Pet. Co., Bigpond 5a ne c 36-15-7e	250	3777
C. G. Tibbens O&G, Long 1, sw c ne 6-14-9e	¶2	1012
F. B. Murta, Stewart 1, c sw nw 32-17-12e	*	2705
Gilcrease Oil Co., Bright 1, se c 26-17-9e	*	3266
H. Robbins et al, Lewis 10, ne c sw ne 35-16-13e	*	1960
GRADY COUNTY—		
Clyde Kahl, White 1, se c sw 30-4n-7w	¶10	2244
HASKELL COUNTY—		
Charles Holden, Phillips 2, nw c sw se se 3-9-18e	*	1860
Marion Oil Co., Sanders 1, nw c ne sw 10-9-18e	*	2693
LATIMER COUNTY—		
LeFlore County Gas & Electric, Ferran RO-13, se sw se 2-6-22e	¶20	1759
LINCOLN COUNTY—		
Mid-Continent Pet., Kilmer 1, se c 26-17-3e	¶3½	3981
Magnolia, Wagner 3, nw c ne 17-14-4e	1432	5163
MUSKOGEE COUNTY—		
E. B. George, Manuel 1, nw c 4-13-16e	25	1646
E. Mills et al, Lowery 1, se c ne nw nw 20-15-18e	*	1370
Dunbar et al, Willis 1, sw nw nw 8-11-19e	*	910
OKFUSKEE COUNTY—		
Atlantic Oil Prod. Co., Fields 2, sw nw nw 13-10-11e	40	2132
Mackey 2, nw c sw se 36-12-10e	100	3053
OKLAHOMA COUNTY—		
Mid-Kansas O&G, Browning 2, nw sw nw 18-11-2w	203	6450
Sinclair O&G, School land 5, nw c se 36-11-3w	31361	6710
I.T.I.O., et al, Wilkie-Anderson 3, sw se ne 25-11-3w	1092	6504
Mary Unsell 3, sw nw ne 23-11-3w	1921	6600
Mid-Texas 1, ne se nw 23-11-3w	6009	6635
Capshawn 1, se c nw 23-11-3w	1222	6555
Habegger 2, sw se nw 14-11-3w	5360	6530
C. C. Julian Oil & Roy. Co., Hauser 1, nw c ne ne nw 14-11-3w	3191	6522
Shepherd 1, se c ne ne nw 14-11-3w	4364	6523
Cromwell-Franklin Oil Co., Trosper Park 22, sw nw nw 13-11-3w	10011	6404
Trosper Park 25, se nw sw 12-11-3w	13,500	6438
I.T.I.O. et al, Starkey 1, nw ne se 11-11-3w	1475	6480
Etaal, Coppinger 5, sw nw nw 11-11-3w	3938	6564
Tom Slick Oil Co., Frost Heights 2, nw c sw se se 10-11-3w	3695	6626
Wirt Franklin Pet. Corp., Theimer 11, sw nw se 2-11-3w	6528	6551
Slick & Atkinson, Trumbley 1, nw ne sw 2-11-3w	¶202	6505
Danruether 2, se c nw 2-11-3w	1850	6420
Alexander 1, se ne sw 2-11-3w	11484	6568
Tom Slick Oil Co., Daugherty 1, nw c sw se nw 2-11-3w	3275	6575

Tabulation and Comparison on Page 74

Company, Well and Location	Initial Production Bbls.	Depth
Slick & Atkinson, Atkinson 1, c w½ w½ nw 1-11-3w	13655	6342
Cromwell-Franklin Oil Co., Lincoln Park 1, sw c 12-12-3w	*	4535
OKMULGEE COUNTY—		
Rossiter Oil Co., Burgess 4, cwl ne nw 20-12-13e	¶4½	1245
Sims Oil Co. et al, Smith 3, cel ne se 21-12-14e	¶1¼	2164
OSAGE COUNTY—		
Clint Moore Estate et al, 9, cwl e½ w½ nw 16-21-9e	*	2380
Hill Drilling & Development Co. 2, nw c se nw 29-21-11e	*	2148
PAWNEE COUNTY—		
Swift et al, Smeizer 7, nw c sw sw ne 35-20-9e	12	1994
PAYNE COUNTY—		
Magnolia Pet. Co., Payne 3, se c ne 6-17-4e	*	4258
PITTSBURG COUNTY—		
Mid-Western O&G, Dyer 1, csl se sw 4-7-18e	¶14	2040
POTTAWATOMIE COUNTY—		
I.T.I.O., Gregg 1, nw se sw 23-6-3e	280	3531
Wilcox O&G, Warren 4, se nw sw 23-6-3e	580	3504
Transcontinental Oil Co., Miller 2 ne c 22-6-3e	*	3619
SEMINOLE COUNTY—		
Eason Oil Co., Anderson 2, se nw ne 22-9-5e	475	4214
Magnolia Pet. Co., Ground 3, sw ne nw 23-9-5e	375	4338
Barnsdall Oil Co., Harjo 2, ne c nw 20-6-6e	225	2906
STEPHENS COUNTY—		
Meridian Gas Co., Burns 1, c sw ne 35-2n-9w	*	2515
WAGONER COUNTY—		
J. E. Martin, Drew 2, cel ne sw 7-18-15e	20	1033
Bolley & Edwards, Childers 1, nw c 34-18-16e	*	735

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Aladdin Pet. Co. & Phillips Pet., Seward 1, sw se ne 14-27-7e	30	2669
Empire O&R, Brandenberger 9 "A", se ne ne 22-27-5e	175	2773
Koogler 101, sw se ne 20-26-5e	55	2546
CHASE COUNTY—		
Empire O&R, Skelly Oil & Phillips Pet., Crosby 1, se c 23-22-9e	*	2603
GREENWOOD COUNTY—		
Derby Oil Co., Beavers 1 "C", ne se sw 25-24-12e	¶1½	1618
Kansan Oil Corp., Stanhope 1, ne nw ne 18-26-9e	*	2363
Simmons & Dixie, Winegar 3, nw ne nw 27-23-11e	*	1997
Simmons et al, Greenwood 1, "B", sw nw se 19-22-11E	*	2201
MARION COUNTY—		
National Refining Co., Reamey 17, csl se 17-21-4e	180	2409
Empire O&R, Heibert 1, se sw se 20-20-2e	*	3175
McPHERSON COUNTY—		
Gypsy Oil Co., Stucky 1, se c ne 33-20-3w	1000	3424
MORRIS COUNTY—		
General Utilities Co., Swan 1, nw sw sw 14-17-7e	¶½	1300
MORTON COUNTY—Argus Prod. Co., Watson 1, c ne 27-34-40w	¶3½	2689
Argus Production Co., Tillett 1, c sw 21-34-39w	¶8	2802
Dreibelbis 2, c nw 9-34-39w	¶12	2790
Garner 1, c se 18-33-39w	¶8	2689
RICE COUNTY—		
Holfine, Lee, Lee and Shell, Sledd Farm Corp. 1, c sw 33-19-6w	*	3588
RUSSELL COUNTY—		
Empire O&R, Herbel 1 nw ne sw, 26-14-14w	*	3323
SEDGWICK COUNTY—		
Fisher & Lauck, Shaffer 1, (owdd), ne se nw 30-27-2e	445	2971
P&R Corp. et al, Mackey 1, (owdd) se nw sw 30-27-2e	38	2983
Fisher & Lauck, Trustee 3, ne nw se 19-27-2e	1000	2975
Magnolia Pet. Co., Anderson 1, ne nw sw 18-26-1e	*	3522
STEVENS COUNTY—		
Argus Prod. Co., Hohnson 1, c sw 13-34-39w	¶¼	2845
Trees Oil Co., Kraemer 1, c nw 2-35-39w	¶¾	2705
Argus Prod. Co., Schaffer 1, c se 6-35-38w	¶4¼	2795
Fee 1, c ne, 15-34-39w	¶9	2705
Sibon 1 c ne, 2-34-39w	¶14	2762
Missouri-Kansas Pipe Line Co., et al, Gregory 1, c nw 19-33-38w	¶5	2692
Missouri-Kansas Pipe Line Co. and McKnabb, Crawford 1, c ne, 32-33-37w	¶8	2770
Harbendorf et al, Persinger 1, c se, 22-31-38w	¶6	2620
SUMNER COUNTY—		
Sunray Oil Corp., Neal 1, se c 29-31-1w	117	3700
WOODSON COUNTY—		
Lewis et al, Dyer 1, sw c 25-23-13e	*	1798

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
GREENE COUNTY—		
Bissett & Gray, Bennett 2	40	2800
Peoples Natural Gas Co., Fox 1	¶½	....
Chartiers Oil Co., Kennedy 1	¶1	2057
BUTLER COUNTY—		
Heater & Co., Halstead 1	¶¼	2972
T. W. Phillips Oil & Gas Co., Obeninger 1	20	2190
BEAVER COUNTY—		
J. L. Abrams, Gerying 1	2	....
WASHINGTON COUNTY—		
Carnegie Natural Gas Co., Clovis 1	*	3265

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
MONONGALIA COUNTY—		
Eldy, Johnson & Co. Fox 1	¶¼	3105
Dermitt-Moore Tex Oil Co., Moore 1	2	1902
C. C. Nuss, Barrickman 1	*	2394
BOONE COUNTY—		
Owens Bottle Machine Co., Pryor 18	¶½	....
Cameron Oil & Gas Co., Ball 1	¶1	2072
Godfrey L. Cabot Gas Co., Nelson Land Co. 7	¶1¼	....
The Pure Oil Co., Sutphin 3	¶2½	2400
WETZEL COUNTY—		
Victor Oil & Gas Co., Kilcoyne 1	*	2784
Wade & Carney, Lemasters 1	10	....
CALHOUN COUNTY—		
C. B. Lewis & Co., Morris 1	¶½	....
Southeastern Gas Co., Holt 1	¶¼	1744
RITCHIE COUNTY—		
McCall Drilling Co., Joyce Hrs. 1	*	1838
Reno Oil Co., Jones 2	¶¼	1874
HANCOCK COUNTY—		
R. J. Braden Co., Brenneman 43	7	....
WOOD COUNTY—		
McKinley Oil Co., Hively 1	2	1115
ROANE COUNTY—		
Keck Oil Co., Smith 1	2	....
WIRT COUNTY—		
W. C. Patterson, Swisher 4	2	....

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
OHIO COUNTY—		
Jas. C. Ellis & Co., Hoover 1	350	....
McKinley 3	*	....
Bellamy 1	*	....
Mecca Oil Co., Miller 1	¶1	....
Eastern Gulf Oil Co., Wimsatt 1	26	513
Penn-Indiana Oil Co., Kelley 20	5	....
Wood Oil Co., Rogers 9	10	....
S. R. Nigh & Co., Kelley 15	19	....
Three "C's" Oil & Gas Co., Rhodes 5	*	1017
Bigler & Becker, Sharp-Johnson 1	*	724
HENDERSON COUNTY—		
Evandsville Syndicate, Sights 1	*	....
T. J. & L. Oil & Gas Co., Farley 2	5	....
Clark-Hill Drilling Co., Buskett 2	¶¼	....
DAVIESS COUNTY—		
Leeper Oil Co., Veach 7	10	....
Petroleum Exploration Co., Clark 7	8	1155
HANCOCK COUNTY—		
Cox, Ewell & Co., Burle 1	¶¼	....
Lowman, Daley & Co., McGovern 6	¶¾	....
McLEAN COUNTY—		
Mel Root & Co., Troutman 1	*	1550
Jas. C. Ellis & Co., Nichols 1	*	1537

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
NOBLE COUNTY—		
C. W. Rich, Rich 5	2	700
Harper & Clay, Luke 5	2	644
HARRISON COUNTY—		
Frank Quinn, Long 10	3	1110
MONROE COUNTY—		
Ohio Fuel Gas Co., Johnson 3	¶¼	1942
MORGAN COUNTY—		
Penn Ohio Gas Co., Reed 1	¶¼	1662
JEFFERSON COUNTY—		
G. A. Vaughn, Vaughn 1	*	1350

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
ATHENS COUNTY—		
Orange Gas Corp., Chapman 1	*	1612
Bowser & Gunther, Brinker 3	*	1402
Ohio Fuel Gas Co., Hudnell 1	*	1200
Clester 3	¶½	1452
MUSKINGUM COUNTY—		
Ohio Fuel Gas Co., Patterson 1	¶½	4051
Allen 2	¶¼	4153
Longfellow & Co., Jackson 1	¶¼	4136
STARK COUNTY—		
F. A. Brendall & Co., Donot 1	*	....
Penn Oil & Gas Co., Swigart 1	¶3¼	3992
Smith 1	*	3973
BELMONT COUNTY—		
Shay McMullen, Stephan 1	3	1970
HOCKING COUNTY—		
The Preston Oil Co., Sunday Creek Coal 92	2	3283
Sunday Creek Coal 97	*	1020
WAYNE COUNTY—		
Faulkner & Co., Smyser 1	¶¼	662
Ohio Fuel Gas Co., Causlin 1	¶¼	....
LORAIN COUNTY—		
Ohio Fuel Gas Co., Campbell 1	*	....
L. T. McGrath & Co., Mohr 1	¶1¼	2395
ASHLAND COUNTY—		
Robinson & Co., Devinney 6	*	642
The Kemrow Co., Smelzer 1	*	2622
GUERNSEY COUNTY—		
Ohio Fuel Gas Co., Robinson 2	20	3406
SUMMITT COUNTY—		
Kime & Co., Wilcox 3	¶2½	4085
TUSCARAWAS COUNTY—		
Hopewell Oil & Gas Co., Smeltz 1	¶¾	3683
MEDINA COUNTY—		
J. R. Kommer, Krugle 4	*	530
Oko Oil & Gas Co., Brinker 26	5	344
McVickers 32	8	461

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
ALLEN COUNTY—		
B. L. Carman & Co., Carroll 4	25	1418
HARDIN COUNTY—		
Traeger Oil Co., Traeger 1	5	....
MERCER COUNTY—		
Margaret E. Grace & Co., Clay 1	2	1184
SHELBY COUNTY—		
Eilerman Oil Co., Gustache 1	*	....

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
JAY COUNTY—		
Flemwell Oil Co., Sutton No. 2, tr. 3	5	....

ILLINOIS

Company, Well and Location	Initial Production Bbls.	Depth
ST. CLAIR COUNTY—		
St. Clair County Oil Co., Metler 3	20	744
MADISON COUNTY—		
Sam Rayburn, Keller 1	12	1290
LAWRENCE COUNTY—		
H. Skidmore, McCleve 2	1	1000
CLINTON COUNTY—		
Thos. Folks & Co., Crocker 1	*	1045

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
ISABELLA COUNTY—		
Sias Oil Dev. Co., McClintic 3	360	3568
Dixie Oil Co., Davis 6	350	3541
New York Pet. Royalty Co., Wezensky 1	125	3666
Stork Oil Co., Coon 8	50	....
Wittmer Properties, Trus., Smith 1	10	....
MUSKEGON COUNTY—		
Central Oil & Gas Co., Joldersma 4	40	....
MIDLAND COUNTY—		
The Ohio Oil Co., Clapp 1	*	3517
CLARE COUNTY—		
Clare Development Co., Hubel 1	*	....
LIVINGSTON COUNTY—		
Crude Oil Co. of Michigan, Tooley 1	*	951
MANISTEE COUNTY—		
Smith & Macauley, Pillusch 1	*	2041

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
LONG BEACH—		
Carter Petroleum Co., No. 3	250	7090
Dabney-Johnson Oil Corp., No. 53	1500	6995
No. 74	250	7400
MARICOPA FLATS—		
Barnsdall Oil Co., Son Crail 1	175	3655
ROUND MOUNTAIN—		
Chanslor-Canfield Midway Oil Co., Poso 1	200	1575
ROSECRANS—		
Union Oil Co., Rosecrans 14	1200	5920
PLAYA DEL REY—		
The Ohio Oil Co., Dickenson 1	500	6505
Mohawk Oil Co., No. 1	200	5635
SANTA FE SPRINGS—		
The Texas Co., Wickman 2-B	200	7700

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
OUACHITA COUNTY, (Smackover)—		
Standard Oil Co. of La., J. M. Farris 7, 23-15-16	30	2035
Wilson & Chapman, J. T. Arnold B-1, 24-15-16	40	2064
J. T. Arnold B-2, 24-15-16	42	2081
UNION COUNTY, (Smackover)—		
J. E. Crosbie, Inc., Lawton 1, 10-16-15, (sec compl)	15	2610
Lion O. R. Co., Lawton A-5, 10-16-15 (sec compl)	*	2398

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
Woodley Pet. Co., Schuler 3, 13-17-12	¶2½	2473
RICHLAND PARISH—		
Palmer Corp., Hill et al 1, 31-16-6e	¶10½	2450
United Carbon Co., Boies 11, 28-16-6e	¶51½	2454
J. M. Thomason A-1, 22-16-6e	*	2462
UNION PARISH—		
Greenwood Prod. Co., Norsworthy 4, 9-21-3e	¶½	2200
WEBSTER PARISH, (Sarepta)—		
K. C. Supply Co., Porter-Cochran 1, 36-23-11	*	2726

COMPLETIONS

TEXAS

SOUTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BEXAR COUNTY—		
Morgan et al, Masterson 3	5	685
DUVAL COUNTY—		
Humble O&R Co., Koehler 40	*	....
LIVE OAK COUNTY—		
Houston Oil Co., Booth 1	*	2500
WEBB COUNTY—		
O. W. Killam, Bruni 19	¶35	2318
WILLIAMSON COUNTY—		
Bartlett and Wilson, R. E. Stewart 1	25	920
McIntyre et al, Lawrence 1-B	300	....
Paul Vitek, Kilgore 6	500	1550
Westbrook et al, T. P. Simmons 6	*	1982
Andy Anderson et al, Forwood 1	50	998
ZAPATA COUNTY—		
Allied Gas Co., Trevino 3-B	50	1268
Trevino 4-B	60	1273
Allied Gas & Allen & Morris, E. Guitterez 61	75	1258

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
Blankenship and Nix, Montemayor 4	65	1270
O. W. Killam, Cuellar 27-C	100	1572
ALLEN DOME—		
Mills Bennett, Reese 1	*	4215
BATSON—		
Ada Belle Oil Co., Gulf 141	2	1180
Paraffine Oil Co., Hooks & Dies 2	*	1450
DANBURY—		
Shell, Blakely-Winston 4	*	1852
ESPERSON—		
Cranfill-Reynolds, Davis 5	360	2344
HULL—		
J. F. Bashara, Bashara 1	400	4050
HUMBLE—		
Rio Bravo Oil Co., Fee 5	240	3784
Fee 6	475	4409
SOUTH LIBERTY—		
The Texas Co., Green 7	*	4480
SPINDLE TOP—		
Yount-Lee Oil Co., McFadden 138	*	6350
PETTUS—		
S. A. C. Corp., Townsite 1, Blk. 19	50	3895
Dr. Hewitt et al, Mrs. Mauldin 1, Bee County, J. Pointevent sur	*	3564
Humble, McKinney 6	190	3895
PIERCE JUNCTION—		
Moody Corp., Hume 5	300	3720
Gulf, Manchester 1	500	3700
ORANGE—		
Sun Oil Co., Gunstream 7	1000	3900
REFUGIO—		
C. T. Tucker, Empson 1	150	3696
T. P. Morgan, O'Connor 2	625	6454
Stroube & Stroube, City 1	380	3690
WEST COLUMBIA—		
Anderson et al, Smith & Brooks 1	10	3255

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Gibson Oil Corp., E. J. Moore 1	¶26	3338
COLLINGSWORTH COUNTY—		
O. H. Shoup et al, Aldons 1	*	3155
GRAY COUNTY—		
Gulf Prod. Co., J. B. Bowers 3	90	3226
Humble O&R Co., Combs-Worley 7	¶15-1500	2820
Midwest Explo. Co., Waggoner 1-A	270	3263
Mutual Consolidated Oil Co., Langham 2	240	2829
Saulsbury et al, Sheridan 1	25	3095
The Texas Co., Saunders 21	¶3-145	2797
MOORE COUNTY—		
Shamrock O&G Co., J. H. Shory 1	¶40	3533
HUTCHINSON COUNTY—		
Gulf Prod. Co., W. P. Dial 47	75	3076
POTTER COUNTY—		
Texas Interstate P. L. Co., R. B. Masterson (Sec. 85) 1	¶6½	2135
WHEELER COUNTY—		
Lone Star Gas Co., I. Close 2	¶6	1691
Krizan 1	¶58	1807
Murchison-Fain-McGaha, Grogan 2	¶35	1850

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CRANE COUNTY—		
Gulf Prod. Co., J. T. McElroy 80	265	2985
J. T. McElroy 81	40	2944
ECTOR COUNTY—		
Gulf Prod. Co., W. E. Connell 2-B	235	3700
University 4	525	3700
University 5-A	660	3700
Humble O&R Co., Eli Jones 1	260	3600
Humble et al, York 10	270	3745
Landreth Prod. Corp., 5-S	325	3653
University 4-T	350	3643
Skelly Oil Co. et al, University 1-C	470	3625
MITCHELL COUNTY—		
The California Co., Morrison 19	85	3080
PECOS COUNTY—		
Cardinal Oil Co., Tippett-Kirby 4	175	475
Continental Oil Co., University 8-A	100	1030
Gulf Prod. Co., M. A. Smith 26	15,840	1693
I. G. Yates 33	925	1575
Landreth Prod. Corp., University 2-I	*	1010
Simms Pet. Co., M. A. Smith 7-A	240	1709
O. J. Perren et al, Jackson-Pure 2	¶13½-2	1610
LOVING COUNTY—		
L. E. Lockhart et al, Ramsey 2	240	4233
WINKLER COUNTY—		
Southern Crude Oil Pur. Co. et al, Hendrick 8-N.T-88	225	2976

(See page 108)

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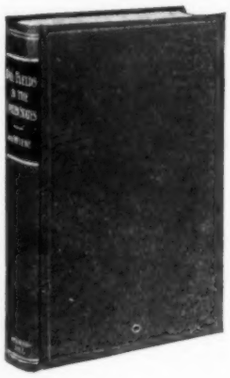

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CENTRAL WEST TEXAS

BROWN COUNTY—
Venmex Oil Co., Perry 1 ..... * 1008
CALLAHAN COUNTY—
Star Drlg. Co. et al, Finley 1-A 5 914
COLEMAN COUNTY—
Elmore et al, Rehm 1 ..... * 1329
McGahey et al, Shore 1 ..... * 1505
Urban et al, Rogers 1 ..... * 2986
COMANCHE COUNTY—
Cornette Oil Corp., Poteet 4 ..... 15 2797
EASTLAND COUNTY—
Hickey O&G Co., Terry 1 .....¶2-400 3491
Hoffman & Page, Lyerla 8..... 15 1260
Texas Development Co., Westholm 2 * 1543
STEPHENS COUNTY—
Alworth et al, Moore 1 dd..... 58 2186

NORTH TEXAS

ARCHER COUNTY—
Joe Hinton et al, Coleman 1 ..... * 1503
COOKE COUNTY—
A. V. Grant et al, Dennis 1-B 80 1219
Russell & Monroe, Robinson 1 ..... * 1563
The Texas Co. & Monroe, Huggins 1 * 1500
MONTAGUE COUNTY—
Bridwell Oil Co., Bouldin 1 ..... * 3024
A. Tubbs et al, Reed 1 ..... * 2811
YOUNG COUNTY—
P. K. Deats et al, Greer 1 ..... * 1255
W. R. Fullerton et al, Belknap 2 .... * 818
Heydrick & The Texas Co., Jeffery 1 * 905
McDonald & Campbell, Furr 1 .... * 905
Panhandle Ref. Co., Watson 4 ..... 30 669
Watson 5 ..... 20 700
Wm. Shriver et al, Neeley 1 ..... * 1170
H. F. Smith et al, Reynolds 1 ..... * 1204
A. H. Stelz et al, Hearne 1 ..... * 1492
Tower-McKanna, Inc., Ware 1 .... * 3820
Westheimer & Daube, Larimore 10 50 712
C. C. Williams et al, Furr 1 ..... * 1103

CENTRAL EAST TEXAS

VAN ZANDT COUNTY—
Pure Oil Co., M. R. Bolin 2 .....3500 2927
A. D. Clark 4 .....5000 2931

NEW MEXICO

LEA COUNTY—
Amerada Pet. Corp., State 2-B..¶1½-1775 4207

Gas Line Completed

Williston, N. D.—This city and the Montana-Dakota Power Company joined for a celebration of the completion of the natural gas pipe line which brings fuel from the Baker-Marmarth field on the Montana-Dakota line, about 40 miles south of Glendive. The line that supplies Williston was built from Glendive this year, and it serves Sidney and Fairview, Montana, as well. It is 12-inch in diameter, more than ample for present needs of these cities, and it indicates that the company has in mind further expansion of the project from this point. There is to be no further work done this year.

American Mining Congress Information Service of September 4 reveals the fact that the Geological Survey has proved occurrences of petroleum in Northern Alaska. Survey of 35,000 square miles of territory which compares a naval petroleum reserve set aside from entry by executive order a few months ago, has been basis for this report. Information concerning extent of exploitations has not been divulged and quantities of oil likely to be found are still a matter of conjecture.

WILDCATS FROM ALL SECTIONS

NEW MEXICO

DeBACA—Matador Oil Co.'s Wood 1, se 6-4n-20e, co 3005 ft.

EDDY—Lockhart et al's Parker 2-X, 3-17-30e, dr 3160 ft.

LEA—Hobbs High Co.'s State 1, se 35-18s-38e, dr 3860 ft. Tidal's Coleman 1, ne 17-21s-36e, show 3877 ft. Atlantic Oil Co.'s State 1, ne 6-19s-38e, dr 3510 ft.

McKINLEY—J. W. Halsell's Santa Fe 1, 17-18-9w, dr 3267 ft. Wms et al's A.T.S.F. 1, sw 19-18n-8w, dr 2280 ft. Walker Dome Oil Co.'s 1, 12-15-10, stand 1012 ft.

QUAY—Silverstein et al's 1, 29-12n-33e, spd 85 ft.

RIO ARRIBA—Berringer et al's Hartman 1, ne 8-29n-7w, sd 825 ft. San Juan Pete Co.'s Gov't 1, se 14-30n-7w, dr 515 ft.

SAN JUAN—Dorothy Oil Co.'s Terwilliger 2, 29-30-9w, stand 1750 ft. Southern Union Gas Co.'s Day 1, se 20-28n-10w, co 1915 ft. Childers Dr. & Pr. Co.'s Westwater 2, nw 23-31-16w, sd 2525 ft. Reserve Oil Co.'s Shafer 2, ne 1-21n-14w, sd 780 ft. Rio Grande Dev. Co.'s Lanier 2, 9-29-11w, stand 1380 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, rig up for Pennsylvania test.

SAN MIGUEL—Pioneer O&G Co.'s Thunderbird 1, nw 14-15n-16e, wait 2355 ft. Starr Oil Co.'s Adams 1, ne 25-17n-16e, 8½-in at 3217 ft. Cibola Pete Co.'s Crown 1, se 9-13n-14e, ready to resume 320 ft. Hershfield Dev. Co.'s Cabra Springs 1, ne 21-12n-22e, dr 1262 ft.

SOCORRO—Lockhart & Co.'s Stackhouse 2, 14-3s-6e, pipe frozen 2770 ft.

TORRANCE—Williams et al's Staplin 1, ne 16-8n-10e, stand 1643 ft. J. B. Witt O&G Co.'s Kutchem 1, 12-17s-7e, dr 1219 ft.

VALENCIA—Rio Puerco Oil Co., N. M.-Ariz. Land Co. 2, ne 13-6n-2w, wtg pipe 3145 ft. Acme Oil Co.'s N. M.-Ariz. Land Co.'s 1, 26-6-3, stand 4741 ft. Harland et al's Harlan 1, 5-6n-2e, dr 4600 ft.

WYOMING

BIG HORN—P. & R.'s Gov't 3, 24-56-98, compl as gasser, td 4234 ft. Westland Oil, Inc., 1, 24-54-95, gas at 510 ft. Wisconsin Holdings, 5-55-97, sd 665 ft. Yellowstone Pete Co.'s 1, 7-57-97, dr 3912 ft.

CARBON—Red Feather Oil Co.'s 1, 35-13-92, spdd.

CROOK—Horth et al, se 9-56n-63w, location. Casper Pete Synd., ne 29-51n-63w, location.

FREMONT—Texas Prod Co.'s State 1, 36-34-96, ur 6⅝-in, td 4472 ft. P&R's 1, 33-34-92, coring at 4127 ft. Yellowstone Oil Co.'s 1, 15-38-94, dr 100 ft.

HOT SPRINGS—Midwest's Weeks 8, 5-55-98, dr 3525 ft. Ohio's Smith 1, 8-46-99, wait for rotary 4403 ft. Gebo Con's 1, se 23-44-95, dr bel 1416 ft, gas and oil showing.

JOHNSON—United Oil Co., 7-47-92, sd 1700 ft.

LINCOLN—Midwest Grey's River 1, 25-37-117, dr 2400 ft. Mtn O'l Corp.'s 1, 36-25-115, cas trouble 815 ft. Wyo Prod. Co.'s 1, 14-24-113, res 370 ft.

NATRONA—Midwest's Midway 1, se 23-35-79, test at 5215 ft. Cuyler Oil Co., sw 24-36n-85w, sett pipe 125 ft. Summit Oil Co., nw 21-33n-80w, cem 510 ft, and dr ahead.

NIOBRARA—West Virginia Synd, ne 7-35-62, dr 400 ft.

PARK—P & R's Pitchfork 1, 14-48-10°, compl 200 bbl. well at 3904 ft. Resolute Oil Co.'s 1, 17-27-101, dr 6800 ft. Cody Pete Co.'s Danker 1, se 22-57-98, skd rig. C. M. Johnson's 1, 11-49-102, dr bel 4245 ft.

SWEETWATER—Vermillion Oil Co.'s 1, se 16-12-99, stand with 10-in cem 2650 ft.

SHERIDAN—Pfeiffer et al, 6-57-84, location.

UINTA—Park City O&G Co., nw 6-51-113, dr 1200 ft.

WESTON—Gose Synd.'s 1, 28-47-65, res 4800 ft. Updike et al's Fiddler Creek 1, 11-45-64, dr bel 1200 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

MORGAN—Ind. Terr. Illum. Oil Co.'s State 1, ne 16-1n-7w, dr 3065 ft.

PARK—So Park Oil Co.'s Milligan 1, se 13-9s-76w, dr 836 ft. So Park O&G Co.'s Esche 1, ne 5-9s-76w, dr 470 ft.

RIO BLANCO—Texas Prod. Co.'s Potter 1, se 30-2n-69w, gas at 5987 ft., blow to co. Magnolia Pete Co.'s Fordham 1, se 9-2s-96w, plugg back to save gas.

WELD—Platte Valley Pete Corp.'s Patterson 1, se 24-6n-61w, dr 6330 ft. Eastman Oil Co., Steel 1, ne 14-2n-67w, dr 165 ft.

WASHINGTON—Middlemist Oil Co.'s Middlemist 1, se 14-4s-56w, stand 1260 ft.

COLORADO

ADAMS—N. M. Slatt 1, se 27-25-64w, dr 2210 ft.

ARAPAHOE—McDebb Dr. Co.'s Fitzsimmons 1, 7-45-66, standing at 5692 ft. Merritt et al, U.P. 1, nw 17-5s-64w, dr 415 ft.

ARCHULETA—Outwest Inv. Co.'s Fitzhugh 1, se 34-33n-1e, dr 520 ft.

BACA—A. R. Jones Oil & Optg Co.'s Boice Cattle 1, 22-34s-42w, dr 2945 ft.

BOULDER—Reliance Oil Co.'s Anderson 1, se 18-3n-70w, dr 941 ft.

DELTA—Crawford O&G Co.'s McKissen 1, ne 28-15s-91w, stand 1100 ft.

DOLORES—Transcontinental's Glade 1, nw 11-41n-16w, cem 6773 ft.

DOUGLAS—Perry Park Oil Co.'s Cannon 1, nw 11-9s-69w, dr 1800 ft.

EL PASO—Utemore Syndicate's Cannon 1, nw 10-16s-66w, stand 1100 ft.

GARFIELD—Fulton Pete Co.'s Permit 1, ne 8-8s-102w, run cas to 1760 ft, to ur to 1300 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-59w, carry 6⅝-in at 3655 ft.

HUERFANO—Parker Club-Kinney Coastal's Fee 1, se 4-2s-69w, sidetr 4116 ft. Ojo Exp. Co.'s Ojo 1, 5-29s-69w, dr 576 ft.

LARIMER—Smith et al's State 1, ne 36-12-70w, lost hole, skd rig.

LaPLATA—McGarr Pete Co.'s Mesa 1, ne 27-33n-12w, dr 2450 ft. Detoit Oil Ass'n's Olbert 1, se 9-35n-12w, stand 2623 ft. Murchison Oil Co.'s Doescher 1, nw 9-33n-13w, dr 565 ft.

LINCOLN—Kelly Oil Co.'s State 1, 25-14n-57w, stand 3415 ft.

MESA—Argo Oil Co.'s Hoel 1, ne 23-8s-104w, plugg back to 2660 ft.

MOFFAT—Vermillion Oil & Gas Synd's 1, se 23-9n-100w, stand 750 ft. Midwest's Hannawalt 24, 4-6n-92w, dr 3015 ft. Mtn Fuel Supply's State 2, Tract 37-12-100, rig. Mtn Fuel Supply's Musser 1, 5-11-97, dr 1900 ft. S. H. Keoughan et al's State 1, sw 15-4n-101w, dr 2180 ft.

MONTEZUMA—Haller et al's Haller 2, 33-36n-14w, dr 740 ft.

MORGAN—Ind. Terr. Illum. Oil Co.'s State 1,, ne 16-1n-7w, dr 3065 ft.

MONTANA

CASCADE—Andover Oil Co.'s Floweree 1, se 20-21-2w, stand 800 ft.

CHOTEAU—Texas Pacific, Lehnfelt 1, rigging up.

FERGUS—Melton Corp.'s 1, se 24-21n-17e, dr bel 2700 ft.

GLACIER—Glacier Oil Co.'s Omsberg 1, nw 35-35-6w, td 1820 ft. repair boiler. Texas Prod. Co.'s 1, 13-35n-6w, dr 2315 ft in light shale. Fulton Pete Corp.'s Blackfoot 1, ne 28-36n-12w, dr 350 ft in 21in hole. O'Neil's Michaelson 1, se 28-36-5w, shutin and rig skd. B. & H. Oil Co.'s Haines 1, se 2-34-6w, wait for pipe 400 ft. Jeffries-Haire-Dawson's 1, ne 7-31-12w, dr 1300 ft.

GOLDEN VALLEY — Golden Valley Oil Co.'s 1, se 28-6-22, de bel 1200 ft. Texas Pacific's 1, sw 21-8s-21e, location for rotary test.

LIBERTY—Square Deal Oil Co.'s Federal Land Bank 1, 1-32n-7e, plug to abn 3710 ft. Northland O&G Co.'s Yurman 1, 36-33n-6e, dr 2350 ft. Sunburst O & R Co.'s McLaren 1, se 9-37-6e, dr 2730 ft. Utopia Oil Co.'s Eleanor Ass'n 1, sw 11-33-6e, ream 2670 ft. Western National Gas Co.'s H. Brown 1, nw 20-37-4e, rigging.

MUSSELSHELL — Minnesota-Flatwillow's Ivanhoe Dome test, 7-11-15, gas show, 440 ft.

PETROLEUM — Minnesota - Flatwillow's 2, 5-13n-25e, rig burned, td 1840 ft. Oregon-Flatwillow's 1, 3-13n-26e, co to 200 ft.

PONDERA—Miller Bros.'s Bruins 1, nw 17-28n-1w, rig up. Oil Well Dr. Co.'s Van Daele 1, ne 35-30-38w, fish tools 4215 ft.

ROSEBUD—Prairie O&G Co.'s N. P. 1, 9-10-39e, sd 2310 ft. Prairie's N. P. 4, 28-10-38e, sd 50 ft. Prairie's 1-X, 26-10-39e, dr 925 ft.

SHERIDAN—Sheyenne O & G Co.'s 1, nw 15-36n-53e, to res at 1400 ft.

TETON—Andover Oil Co.'s Carlson 1, ne 5-24n-4w, td 300 ft. Newman et al's Fitzgerald 1, 26-32n-12, rig up. Rocky Mtn O&G Co.'s Calmond 1, ne 4-23n-8w, stand 1700 ft. Midwest Ref. Co.'s Scott 35, ne 2-26n-5w, dr 1855 ft, ready to run casing.

TOOLE—Mont. Oil Corp.'s Beaupre 1, se 32-37-1w, dr hfw 2363 ft. Internat'l Roy Hold. Co.'s Henry 1, se 26-35-3e, dr and ur 2290 ft. Vantana Oil Co.'s Peterson 1, sw 22-34-4w, run. cas 1967 ft. O.I.C. Gas Co.'s Wolland 1, se 11-34-2e, rigging up.

VALLEY—T. P. Jones' 1, nw 31-37-38e, test gas at 1090 ft.

SOUTHERN CALIFORNIA

CORONA — Western Gulf's Abacherli 1, grade.

COMPTON—Central Heights Oil Corp.'s Veach 1, plugging back to 1710 ft to test upper showings, td 5095 ft. Tenacity Oil Co.'s Del Amo 1, co, td 8500 ft.

FULLERTON—Brea Canyon Oil Co.'s Fee 47, dr shale 5000 ft. L. C. Simmel's Todd 1, sd 2695 ft. Standard's Bastanchury 1, dr shale 6680 ft.

MONTEREY PARK—Celito Oil Co.'s Jepson 1, cmt 5⅝-in cas at 3700 ft, td 5277 ft

NEWHALL—Dudley-Newhall Synd.'s No. 1, 16-in cas cmt 757 ft. National Securities Co.'s Seeple 1, dr shale 1560 ft. Southern California Drilling Co.'s Needham 4, 11¾-in cas re-cmt. 1685 ft, td 1715 ft.

NEWPORT—Standard's Irvine 1, repairing equipment, td 1910 ft.

PLAYA DEL REY—West Port Oil Co.'s No. 1, shut in after blowing out at 1820 ft, made gas but no oil. Hollywood Synd.'s No. 1, lcn. Olympic Oil and Realty Co.'s No. 1, dr shale and sand 463 ft.

POMONA—Lamona Oil Ass'n's No. 1, dr granite 900 ft.

PUENTE—Arden Oil Co.'s Bidart-Rowland 1, dr gray sand 2278 ft. Bardeen Oil Co.'s Didier 1, dr gray sand 4378 ft. Marcell Pet. Co.'s Marcell 1, coring sand 2820 ft. Rio Hondo Pet. Co.'s Rowland 1, dr shale 3250 ft. Union's Sansinena 11, dr oil sand and shale 4820 ft Western Gulf's Diamond Bar 1, fsh 6590 ft.

ROSECRANS — McMahon & McDonald's Kirst 1, rigging up to deepen from 4483 ft. Tri-State Pet. Corp.'s No. 1, dr gray sand 4900 ft.

SAN FERNANDO—Shell's Andrews 1-1, dr 4820 ft.

SANTA FE SPRING — L. S. Hartman's

Campos 1, dr gray sand 4378 ft. Union's Orchardale 1-1, dr brown shale 4250 ft.

SAN JUAN CAPISTRANO—Okay No. 2's Foster 2, dr gray sand 4350 ft.

TORRANCE — California-Ventura Oil Co.'s Holston 1, pumping oil and mud, td 3390 ft. Rio Grande's Watson 1, fsh for drill pipe, td 6297 ft.

NORTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
FRESNO COUNTY—		
Richfield's Schrock 1, 33-22-16.....	* 3435	

KERN COUNTY

BELRIDGE—General Pet.'s Berry 1, 30-28-21, rig completed. Richfield's Belridge 1, 22-27-20, dr shale 4450 ft. Rio Grande's Garcia 1, 18-28-22, m on iron 3680 ft. Shell's No. 1, 25-28-20, dr shale 435 ft. K. C. Wallace's No. 1, 32-29-21, dr shale 3620 ft.

BUTTONWILLOW — Nordon Oil Corp.'s Salisbury 1-A, fsh for drill pipe 4910 ft.

COMANCHE POINT—W. W. Stabler's No. 1, 4-11-18, dr hard sand 1820 ft.

EDISON—Petroleum Securities Co.'s Johnson-Moss 1, 14-29-29, dr hard sand 2435 ft. F. M. Sayre's No. 1, 5-30-29, sd 4220 ft.

EL TEJON—J. J. Ritchie's No. 1, 33-11-19, dr hard sand 3115 ft.

McKITTRICK—Ohio's M. M. 1, 32-20-22, co to deepen from 7270 ft.

PATTIWAY—H. A. Bardeen's Klipstein 1, 18-10-23, sd 1185 ft; Ramsey 1, 10-10-23, dr gray sand 3740 ft.

SEMITROPIC—Shell's Williams 1, 17-27-23, dr shale 5900 ft.

SHALE HILLS—Rio-Cal Pet. Co.'s No. 1, 2-27-18, dr shale 1933 ft.

WEED PATCH—Shell's Porter-Day 1, 29-30-29, dr shale 5345 ft.

SANTA BARBARA COUNTY

CAMPBELL'S POINT — Bolsa Chica Oil Corp.'s Augur 191-1, 24-4-9, dr shale 1575 ft.

CASMALIA—Wildcat Oil & Royalty Co.'s Donovan 1, 20-10-35, dr 5450 ft.

EL TORO—Shell's Fithian 1, 18-4-25, flowing water, td 4390 ft.

GATO RIDGE — Barnsdall's Tegnazzini 1, 9-8-32, dr shale 3248 ft.

GOLETA—General Pet.'s More 3, dr shale 855 ft. George W. Johnson's Duncan Ranch 1, rigging up rotary 3985 ft.

LOMPOC—Prairie's Shyvers 1, 11-7-35, dr gray sand 5038 ft.

LOS ALAMOS—N. S. Wilson's No. 1, lcn.

NAPLES—J. H. Cochran's No. 1, 7-4-29, dr shale 2935 ft.

ORELLA-CAPITAN — General Pet.'s Erburu 8, dr 300 ft; Erburu 9, lcn; Erburu 10, lcn.

POINT CONCEPCION — Standard's Gerber 1, dr gray sand 5855 ft. Universal Consolidated's Concepcion 1, 30-5-34, dr gray sand 4450 ft.

PURISIMA—Vaqueros-Major Oil Co.'s Annex 2, dr out cmt 1875 ft; Annex 3, lcn.

SANTA MARIA—O. C. Field Gasoline Co.'s Norswing 1, 8-9-33, dr gray sand 4735 ft; Bradley 1, pulling 4½-in cas, td 5267 ft. Western Gulf's Bradley 1, 5-9-33, 16-in cas cmt 853 ft.

VENTURA COUNTY

HOPPER CANYON—Rio Grande's Lankershim 1, 13-4-19, fsh for jars 1820 ft.

LOCKWOOD — Lockwood Valley Oil Co.'s No. 1, 32-8-21, rig.

PIRU—A. N. Macrate's Torrey-Eureka 1, 32-4-18, rig.

RINCON — Chanslor-Canfield Midway Oil Co.'s Hobson A-2, 23-3-24, flowing about 75 bbls on compressor, td 7480 ft.

SANTA MONICA MOUNTAINS—Olympic Corp.'s Calabasas 1, 18-1-17, 9-in cas cmt 4540 ft, td 5670 ft.

SANTA PAULA—W. W. Bryant's Anlauf 3, 31-4-21, dr hard gray sand 1414 ft. Empire Oil Co.'s Steen 4, 13-4-21, testing showings at 1200-1300 ft, td 3840 ft. George C. Thompson's No. 1, 15-4-21, dr shale 1638 ft.

SESPE—Superior's Kirtlan 1, 15-4-21, co 500 ft.

SOMIS—Shell's Everett 1, dr shale 3025 ft.

VENTURA—Prairie's Sexton 1, 30-3-22, dr gray shale 7187 ft.

MISCELLANEOUS

FRESNO COUNTY—Friend & Fiske's No. 1, 11-23-19, rig. J. E. O'Donnell's No. 1, 7-23-20, shut in after flowing gas at 3-million cubic foot rate.

MENDICINO COUNTY — Twin State Oil Co.'s Soldani 1, 14-12-17, dr shale 4305 ft.

MONTEREY COUNTY — Standard's Piedmont 1, 23-22-7, dr gray sand 5282 ft.

SAN LUIS OBISPO COUNTY—F. J. Potter's No. 1, 1-29-12, rigging up. Panorama Oil Co.'s Panorama 1, 7-31-21, sdtr cas 4015 ft. Paso Robles Synd.'s Emerick 1, 34-27-11, fsh for tools 3910 ft. Latin-American Oil Co.'s Whitley 1, 31-27-15, dr gray sand 4522 ft. Pismo Dome Oil Co.'s Pricco 2-A, dr shale 2707 ft. Texas Pacific Coal & Oil Co.'s No. 1, 25-32-14, co 4012 ft.

TULARE COUNTY — Campbell Oil Co.'s No. 1, 22-2-27, rigging up. Colton Drilling Co.'s Henshaw 1, 34-22-27, dr 450 ft. Hudson & McLoney's No. 1, 7-23-28, sp. William Hallock's Fee 1, 34-22-27, dr hard sand 1065 ft. Jennings Synd's McMasters 1, 8-23-28, lcn. Kern Pet. Co.'s No. 1, 34-22-27, rig. Paul M. Lewis' No. 1, 15-22-27, rigging up. Larson Oil Co.'s Best 1, 11-23-27, dr shale 728 ft. Mills & Wilson's No. 1, 35-22-27, dr oil sand 920 ft. Rayatt Oil Co.'s Henshaw 1, 34-22-17, dr hard sand 200 ft. Terra Bella Drilling Co.'s Keen 1, 34-22-27, dr rock 1238 ft; Rusling 1, pumping water 925 ft. Terra Bella Oil Co.'s Gardiner 1, 35-22-27, pumping 25 bbls oil and 75 bbls water, td 918 ft. Western Oil & Exploration Co.'s Gardiner 1, 35-22-27, 6⅝-in cas cmt 1022 ft, co.

YOLO COUNTY—George F. Getty's Guinda 1, 23-12-3, 13⅜-in cas cmt 205 ft.

OKLAHOMA

WOODS COUNTY—T 27n, R 16w, Sec. 33, Sinclair, Share 1, c ne sw, show oil 7137-38½ hfw 7160 ft dr 7215 ft hfw.

ALFALFA COUNTY—T 27n R 11w Sec. 12, Smith Bros., Forbes 1, ne c se nw nw, td 1420 ft sd.

KAY COUNTY—T 27n R 2e Sec 17, Blankenship et al, Hansen 1, sw nw sw, shot 10, 20 and 40 qts sand 3587-97 ft pump 20 bbls.

HARPER COUNTY—T 26n R 24w Sec. 14, Sinclair, Howell 1, c sw sw, td 8590 ft pb shot 5 qts 5300-40 ft 7m gas.

GRANT COUNTY—T 26n R 5w Sec. 25, Bu-Vi Bar et al, Hurst 1, c sw dr 4634 ft.

KAY COUNTY—T 26n, R 1w, Sec. 32, Boucher et al, Jefferson 1, ne c sw, spudding.

HARPER COUNTY—T 25n R 20w Sec. 12, Empire, Bruce 1, sw c ne ne sw, dr 5740 ft.

WOODS COUNTY—T 25n r 15w Sec. 10, Bu-Vi Bar et al, Fee 1, se c sw, sd 6104 ft.

ALFALFA COUNTY—T 24n R 11w Sec. 14, J. V. Bailey et al, Acre 1, c sw ne, salt water 4649 ft 8-in 4660 ft woc.

GARFIELD COUNTY—T 24n R 6w Sec. 9, Pulse & Beamer, White 1, se c nw, sand 5566-70 ft dr 5710.

WOODWARD COUNTY—T 23n R 17w Sec. 23, Transcontinental & Prairie, Wilbur 1, ne c, sd 7425 ft.

GARFIELD COUNTY—T 23n R 4w Sec. 32, Shell et al, Loomis 1, c nw nw, show oil and water 6132 ft Wilcox 6185-6277 ft td hfw plugging.

WOODWARD COUNTY — T 21n R 19w, Sec. 15, Burgoyne Bros., Merklin 1, sw c se ne, sd 1910 ft.

BLAINE COUNTY—T 19n R 10w, Sec. 13, Washoma Pet. Co., Phillips 1, c nw sw, 3220-25 ft hfw sd 3730 ft.

LOGAN COUNTY — T 18n R 3w Sec. 33, Healey et al, Quier 1, se c sw, sd 3970 ft. T 17n R 4w Sec. 34, Eason Oil Co., Katchor 1, sw c ne sw, dr 4175 ft. T 17n R 1e Sec. 22, Prairie & Slick, Simms 1, ne sw se dr 3440 ft.

KINGFISHER COUNTY—T 16n R 7w, Sec. 6, Gault Brown, Boch 1, c nw se (owdd) td 6022 ft dr on iron.

LOGAN COUNTY—T 16n R 1w Sec. 33, Prairie & Slick, Morgan 1, c nw ne, td 5364 ft cemtd off cave.

PAWNEE COUNTY—T 23n R 5e, Sec. 15, Cochran et al, McFadden 1, ne c sw, rig. T 22n R 3e, Sec. 26, Wentz, Lillie 1, se c sw ne, dr 2032 ft. T 20n R 5e, Sec. 22, J. M. Scott et al, Jones 1, sw c ne, dr 2965 ft.

LINCOLN COUNTY—T 17n R 2e Sec. 28, Thurman, Deaner et al, Stufflebeam 1, ne c sw, Wilcox 4925-30 ft water sd. T 14n R 6e Sec. 5, Atlantic, Ryan 1, se c nw, ur 6-in csg. 3708 ft. T 13n R 4e Sec. 2, Magnolia, Winship 1, ne c sw, dr 5220 ft.

OKFUSKEE COUNTY—T 12n R 9e, Sec. 36, Henry Oil Co., Harjo 1, nw c, dr 3923 ft. T 12n 10e Sec. 3, Sheppard et al, Sheppard 1, se nw sw, td 3690 ft water sd.

MUSKOGEE COUNTY—T 11n R 19e, Sec. 2, E. Mills et al, Martin 1, nw c se, sd 1001 ft.

PITTSBURG COUNTY—T 9n R 16e, Sec. 32, Pattison et al, McDuff 1, sw nw se, Wilcox 5556-60 dr bridge 5473 ft.

HASKELL COUNTY—T 9n R 18e, Sec. 10, Marion Oil Co., Sanders 1, nw ne sw, 2m gas, 1800 ft, td 2692 ft d and a.

OKLAHOMA COUNTY—T 14n R 3w, Sec. 32, Mid-Kansas, Messer 1, sw c td 6702 ft, woc. T 13n r 3w Sec. 17, Prairie & Slick, Dills 1, c se nw, td 6630 ft woc. T 13n R 3w, Sec. 35, Magnolia & Ramsey, Johnson 1, ne c sw, Wilcox 7133-7212 ft, td to pb. T 12n R 4w, Sec. 17, C. F. Cuniff, Trustee, St. Joseph Orphanage 1, sw ne sw se, sd 6700 ft td. T 11n R 2w, Sec. 3, Ryan Consolidated, Lawton 1, ne c nw, td 6902 ft woc.

CLEVELAND COUNTY—T 6n R 1e, Sec. 20, Harris & McNeal, Corbett 1, c sw ne, td 6518 ft, 6-in. 6330 bailed show oil.

OKFUSKEE COUNTY—T 11n R 8e Sec. 11, Carter et al, Keys 1, sw ne sw, ur 8-in at 2950 ft.

HUGHES COUNTY—T 9n R 12e, Sec. 29, Chas. Cannady, Kanard 1, nw c sw, Wilcox 4468-4506 ft hfw, pb 3540 sd.

POTTAWATOMIE COUNTY—T 8n R 3e, Texas Co., Knight 1, sw c se, dr 4510 ft. T 8n R 4e Sec. 11, Lippa Drlg. Co. et al, Helinerick 1, ne c nw, fsh 3610 tt. T 6n R 4e, Sec. 30, Deep Rock, Marshall 1, sw c dr 3350 ft.

SEMINOLE COUNTY—T 6n R 7e, Sec. 9, Neal & Milton, Thomas 1, nw ne sw, cellar.

ROGER MILLS COUNTY—T 12n R 24w, Sec. 23, Bucy & Stone, Williams 1, c sw, sd 2243 ft.

BECKHAM COUNTY—T 10n R 22w, Sec. 29, J. F. Cuniff et al, Brower 1, c nw, sd 3793 ft.

CANADIAN COUNTY—T 10n R 6w, Sec. 1, J. V. Bailey, Rovinson 1, c ne nw sd 150 ft.

CADDO COUNTY—T 9n R 13w, Sec. 18, J. J. Wright & Shell, Boys 1, ne c location.

BECKHAM COUNTY—T 8n R 22w, Sec. 20, Carson et al, Denby 1, sw se ne, 1625 ft dr cement.

GREER COUNTY — T 7n R 22w, Sec. 1, Roy Good & D. M. Dowell, Cliffel 1, nw c sd 1265 ft. T 6n R 24w, Sec. 17, I.T.I.O., et al, Fee 1, c ne, sd 2485 ft.

CADDO COUNTY—T 6n R 11w, Sec. 24, Simms Pet. & J. R. Wrightsman 1, se c nw, rig.

HARMON COUNTY—T 4n R 24w, Sec. 17, Harmon-Tex Oil Co., Headley 1, ne c fish 2380 ft.

COMANCHE COUNTY—T 3n R 9w, Sec. 3, Okla. Nat. Gas Co., Doebel 1, ne c sw sw sw, sd 1450 ft.

COTTON COUNTY—T 4s R 13w, Sec. 2, Shasta Oil Co., McMillian 1, c se se, dr 2200 ft.

HUGHES COUNTY—T 5n R 10e, Sec. 30, Erwin et al, Jones 1, se c ne, r.u.s.t. 4275 ft.

HUGHES COUNTY—T 5n R 11e, Sec. 15, J. J. Wright, Roberts 1, se c sw, 2m gas, 915-18 sd 1645 ft.

GARVIN COUNTY—T 4n R 3e, Sec. 10, C. R. Obermeyer, Stricklin 1, ne c sw, sd 2680 ft. T 3n R 4w, Sec. 5, McMin & Arrowsmith, Carson 1, ne c nw, sd 3026 ft.

COAL COUNTY—T 3n R 9e, Sec. 26, Blackwell, Gumm 1, nw c dr 3800 ft.

ATOKA COUNTY—T 3s R 10e, Sec. 18, Brookshire et al, Guinn 1, nw c, sd 80 ft.

CARTER COUNTY — T 4s R 2e, Sec. 32, Tex-Okla. Drlg. Co., Anderson 1, se ne se, 2580 ft, fshg.

LOVE COUNTY—T 6s R 3w, Sec. 20, Harry Hobbs, Steele 1, sw c ne ne sw, sd 3130 ft.

BRYAN COUNTY—T 6s R 7e, Sec. 8, G. L. Pace, Hicks 1, sw c nw, dr 1070 ft. T 6s R 7e, Sec. 14, W. A. Johnson, Ussery 1, se c sd 325 ft. T 6s R 9e, Sec. 35, O. P. Bush, Commerce Trust So., 1, ne c sd 600 ft.

MISSISSIPPI

Company, Well and Location	Initial Production Bbls.	Depth
HINDS COUNTY, (Jackson District)—		
Love Pet. Co., Dreyfuss 1, 10-5-1e..	* 2597	

ADAMS COUNTY, (Natchez District)A. C. Glassell et al's Stowers 1, 28-8-2w, dr 2180 ft.

ALCORN COUNTY—Alcorn Pet. Co.'s Matthews 1, 14-2s-7e, fsh junk td 2735 ft.

CLAY COUNTY—Ohio Oil Co.'s Fee 1, ne ne 16-15s-5e, mov in rig.

CHICKASAW COUNTY—Hightower & Gol-

son's Fleming 1, 30-13-3, sd 1414 ft. Fleming 2, 15-13-2w, dk pat.

HINDS COUNTY, (Jackson District)—Mrs. Ella Rawls Reeder's State Land 1, 25-6-1e, sd 2905 ft. Done O&G Co.'s Elton 1, 5-4-1e, arr abn in hd gray sand 2805 ft. Jackson O&G Co.'s Central Cotton 1, 3-5-1e, dk. Mayes 2, 2-5-1e, set 6⅝ cas top midway shale 2482 ft, topped Midway chalk 2581 ft, sd in chalk and shells wo drill pipe 2737 ft, elev 269 ft. Love Pet. Co.'s Morton 1, 34-6-1e, mov in rig. Dreyfuss 1, 10-5-1e, topped Midway shale 2475 ft, top chalk 2594 ft, sw abn td 2597 ft. Love Prod Co.'s Crisler 1, nw sw 2-5-1e, sp dr rock 1300 ft. Miss. Tex. Oil Co.'s Negro Fair Assn. 1, 28-6-1e, dr 1410 ft. Tri-State O&G Co.'s Wilson 1, 23-6-1e, dk. Universal O&G Co.'s Holliday & Ross 1, 8-6-2e, sd wo in streaked limestone 2653 ft. Sharbrough 1, 28-6-1e, set 10-in cas 88 ft wo. Feazel O&G Co.'s Millstein 1, 2-5-1e, topped Midway shale 2324 ft set 6⅝ cas 2404 ft. Gulf Ref. Co.'s Crane-Lawrence 1, 26-6-1e, dr Wilcox 2337 ft. City of Jackson 1, 10-5-1e, set 10-in cas 800 ft. Miss. Pet. Co.'s Solvent Inv. 1, 14-5-1w, dk. Baptist Orphanage 1, se se 28-6-1e, dk. pat. Love Pet. Co.'s Ridgeway 1, 2-5-1e, dr 2100 ft. Le Fleur O&G Co.'s Chadwick & Brown 1, sw nw 11-5-1e, dk. Kennedy et al's Fee 1, ne ne 34-6-1e, lcn.

LA FAYETTE COUNTY—F. E. West et al's May 1, 22-10-1w, rig up wo.

MADISON COUNTY, (Jackson District)—Miss. Pet. Co. Inc's Raymond 1, 32-7-2e, arr set 12½-in cas in blue gmbo 706 ft.

MONROE COUNTY, (Amory District)—Amory Dev. Co.'s Bourland 1, 2-13-19, sd wo 2912 ft. Park Bowser's Cowart 1, 2-12-19 sd 85 ft. Associated Royalties' School Board 1, 16-15-17w, sd 60 ft.

RANKIN COUNTY, (Jackson District)—Love Pet. Co.'s Moore 1, 28-6-2e, sd 900 ft. Redmond et al's Gravens 1, 12-5-1e, dk. Gulf Ref. Co.'s Hartfield A-1, 7-5-2e, topped Midway shale 2290 ft arr set 6⅝ cas. Pearl River O&G Co.'s Pate 1, 12-5-1e, dr 1520 ft. Southern Pet. Co.'s Investment 1, 12-5-1e, sp. Millstein O&G Corp.'s Hartfield 1, se ne 12-5-1e, dk.

WARREN COUNTY (Vicksburg District)—Henderson et al's Dornbush 1, 8-18-15, sd with ds in hole td 2475 ft.

WEBSTER COUNTY—Cumberland Oil Co.'s Henley 1, 15-21-11, td 1865 ft

YALABOUSHA COUNTY, (Water Valley District)—J. D. Collett et al's Blackmer 1, 14-11-4w, arr abn td 2434 ft.

ALABAMA

HOUSTON COUNTY—J. R. Sealey et al's Fee 1, 13-1n.27e, changing from cable tools to rotary td 3100.

LAUDERDALE COUNTY—P. J. McAlpine's O'Neal Hrs. 1, 8-2s-13w, reset 8¼-in cas white limestone 1908 ft, arr resume dr 1910 ft.

MORGAN COUNTY—Albany-Decatur O&G Co.'s English 1, 6-6-4, fsh for cas td 4130 ft.

SUMTER COUNTY—B. W. Bates' Fee 1, 3-18-1w, ta 1200 ft. Fee 2, 3-18-1w, rig up wo.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, sd in limey shale 881 ft. Hobson Bros. 1, 9-8-2w, sd 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, no report.

TENNESSEE

DECATUR COUNTY — Chester County O&G Co.'s Montgomery 1, sd 1881 ft.

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
OUACHITA COUNTY—		
Anderson et al, Buck 1, 7-15-17	* 2723	

CHICOT COUNTY—H. R. Smith's Lytle 1, 31-18-3, rig up.

CLEBURNE COUNTY — Cosden Oil Co.'s Donithan Lbr. Co. 1, 19-9-10, re-set 8¼-inch cas 3900 ft. Donnell et al's Fee 1, 33-11-9, dr lime 2700 ft (corrected).

COLUMBIA COUNTY—Sam Y. Dorfman's Merrick 1, 16-17-20, dr 1150 ft.

FRANKLIN COUNTY—Red Bank Oil Co.'s Hamm 1, 33-10-26, tested est 3 to 4 mil cu ft gas, top sand, arr set 6⅝ cas on botton, td 3759 ft.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-3n-19w, sd in lime repr rig, 3750 ft.

GRANT COUNTY—J. R. Lockhart's Cunningham 1, 11-5-16, dk.

HOT SPRINGS COUNTY—Cleary Bros. et al's Hinson 1, 19-4s-16w, set 15¼-inch cas 20 ft, 12¼-inch cas 294 ft, 10-inch cas 405 ft, 8-inch cas 505 ft, dr 805 ft.

JOHNSON COUNTY—Blackwell O&G Co.'s Wyver 1, 21-8-23, jarring out 6-inch cas 2100 ft, td 5600 ft. Cohn Gables et al's Holing 1, 20-9-25, dr hard sand 2236 ft.

LA FAYETTE COUNTY—Crawford Drilling Co.'s Vaughan 1, 25-19-25, rig up.

LAWRENCE COUNTY—Marguerite Dev. Co.'s Broadway 1, 31-17-1, sd 45 ft.

LITTLE RIVER COUNTY—Buck Oil Co.'s Taafe 1, 25-12-32, sd 2505 ft.

LINCOLN COUNTY — B. F. Thompson, Tr.'s, McGehee 1, 8-8-7, rig up.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. M. Flowers' White 1, 13-6-26, ur 5 3/16-inch cas 3570 ft, td 3610 ft.

MADISON COUNTY—J. W. Baxter's Hallem 1, 17-16-26, sd 540 ft.

MILLER COUNTY—E. & F. Oil Co.'s E. L. Beck 1, 36-15-26, sp sd cur titles. Lenz et al's Dale 1, 25-15-26, old hole arr deepen, td 2842 ft; Johnson 2, 24-15-26, dk pat. East Texas O&G Dev. Co.'s Fee 1, 2-15-26, lcn. O'Mara et al's Person 1, 31-15-25, lcn.

OUACHITA COUNTY — Anderson et al's Buck 1, 7-15-17, junked abn, td 2723 ft. Belmont et al's Dean 1, 16-15-17, dr 1214 ft. A. B. Turner, Tr.'s, Brown 1, 23-15-18, set 10-in cas 103 ft, wo.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, lcn.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, straightening hole, td 1530 ft. Ark. Valley Gas Co.'s Turner 1, se se 27-5n-30w, lcn.

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29, tested sw, wo td 3515 ft. Mansfield Gas Co.'s Fee 14, 1-4n-31w, sd for water 1027 ft. Ozark Nat. Gas Co.'s Bates 1, 28-8-30, dr shale 800 ft. Lavaca O&G Co.'s Moore 1, nw sw 27-8-30w, lcn.

UNION COUNTY—Hickman et al's Hogg 1, 35-16-17, sd for water while fsh, td 2157 ft. Marine Oil Co.'s W. B. Thompson B-2, 10-18-13, lcn; P. Winn Est. F-1, 10-18-13, dr 2524 ft. Sunby et al's Perdue 2, 23-16-14, sd 3207 ft. Rice et al's Whatley 1, arr resume dr 92 ft. Malloy & Co.'s Burns 7, nw nw 31-17-15, rig up.

WASHINGTON COUNTY—Taylor et al's Runny 1, 1-13-29, fsh tools 1005 ft. Lincoln Lease Holding Synd.'s Townsite 1, 30-15-32, TA 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, TA 850 ft. Delbert Graves' Cunningham 1, 14-15-32, sd in gray sand 602 ft.

VAN BUREN COUNTY—J. S. Martins Scanland 1, 5-9-13, sd 50 ft.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-21, dr 4663 ft.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
H. I. Morgan & Shreveport-El Dorado P. L. Co., Kendricks 2, 22-19-11	300	1800
SABINE PARISH, (Zwolle)—		
Pelican Nat. Gas Co., Sabine Lbr. Co 3,.	*	2821

BIENVILLE PARISH—Nichols et al's McDermott 1, 28-16-6w, tested 1 fourble mud 10 ft oil ds set 6⅝ cas 2181 ft, testing cas td 2256 ft. S. P. Bodren et al's Thomas 1, 27-16-9w, dr 2400 ft. Carter & Dobbs' White 1, 9-18-6w, rig up. Olds & Smith's Price 1, 15-18-6w, sp set 10-in cas 100 ft dr 150 ft.

BOSSIER PARISH—Andrews & Davlin's Nattin 1, 15-22-14, 20 ft bro sand wo td 1501 ft. Autrey Oil Co.'s Johnson 1, 34-19-11, sd for fuel 60 ft. McDade 1, 28-19-11, dr sandy shale 1950 ft. H. I. Morgan & Shreveport-El-Dorado P. L. Co.'s Kendricks 2, 22-19-11, completed flowing 500 bbls. oil of 50 gravity thru ¼-in choke working pressure 660 lbs. 8 ft sand now flowing 300 bbls oil 500 bbls sw thru ¾-inch choke gas decreasing td 1800 ft. Kendricks 3, 22-19-11, sp 10-in cas 143 ft dr 475 ft. Triangle Drilling Co.'s Bolinger 1, 36-23-13, dr 2920 ft.

CADDO PARISH—L. B. Mawk's Swann 1, 23-21-14, sd for fuel 700 ft.

CATAHOULA PARISH—La. G&F Co.'s Tensas Delta A-1, 23-6-5e, sd for fuel 1483 ft.

CLAIBORNE PARISH—El Dorado Chief Oil Co.'s Dance 1, 27-20-7w, sd 2240 ft. Triangle Drilling Co.'s Cox Fee 1, 6-19-5w, set 9-in cas 3952 ft. Baird Bros. et al's Whittaker 1, 30-20-7w, dr 1450 ft. Bough et al's Alexandria 1, 27-20-8w, lcn.

CALDWELL PARISH—Hudson et al's Burton 1, 35-12-2e, sd for water 720 ft.

CONCORDIA PARISH—A. C. Glassell et al's Pittsfield Plantation 1, 41-8-10e, twisted off ds in hole making gas td 1453 ft. Pecania Plantation 1, 46-8-9e, lcn. Britton Koontz National Bank 1, 20-8-10e, lcn. Joe Marr et al's Maxwell 1, 35-3-8e, set 8-in cas 2000 ft td 2820 ft.

DESOTO PARISH — Joe Burnham et al's Hood 1, 30-11-14, set 6¾ cas 2290 ft tested dry show oil 2352 ft sd wo. Mich-Louisiana O&G Dev. Corp.'s Payne 1, 12-11-16, sd wo 2070 ft. Gulf Ref. Co.'s Dry et al's 1, 14-11-15, dr 3148 ft. Odell & Lawton's Tidwell 1, 11-13-14, tested sw show gas 3004 ft arr plug bottom shut off sw. Holly Oil Co.'s Talbot 1, 9-13-13, rig up. Pelham & Bundy's Rhodes 1, 32-13-14, set 6⅝ cas 2800 ft arr test 5 ft sand slight show oil td 2990 ft. J. W. Clark's Tidwell 1, 22-13-14, rig up. R. O. Roy's Nelson 1, 36-15-13, tested sw wo 2700 ft. Wilcox 1, se nw 35-15-13, dr 1250 ft. Standard Oil Co of La.'s Dowling Bros. 2, 5-13-13, 7-in cas 2800 ft bro snd wosr td 2840 ft. S. A. Guy et al's Dowling Bros. 1, 31-14-14, dk.

JACKSON PARISH—El Dorado Chief Oil Co.'s Southern Adv. Paper Co. 1, 35-15-4w, sd 1083 ft.

LINCOLN PARISH—Ark. Fuel Oil Co.'s Lewis & Co. 1, 26-20-4w, set 6⅝ cas 4234 ft, tested sw at 4292 ft, plugged back to 4256 ft, tested dry sd wo.

MOREHOUSE PARISH—Pelican Nat. Gas Co.'s Tensas Delta 1, 17-18-6e, dr 1581 ft.

NATCHITOCHES PARISH—W. M. Coats et al's Collins 1, 28-9-10, set 6⅝ cas 2224 ft, wo water to drill in td 2270 ft. J. W. Cooper et al's Cooper 1, 35-11-10, dr 820 ft. Robeline O&G Co.'s Winn 1, 7-8-9w, sd in rock 1635 ft. S. D. McDaniels' Clark-Morse 2, 23-5-6w, sd 2536 ft.

RAPIDES PARISH—Ayers Bros.' Wicklipp 1, 9-5n.2e arr abn td 3800 ft.

RED RIVER PARISH—E. C. Lucas' La. Delta Pecan 1, 34-13-11, set 6-in cas 2440 ft, 17 ft sand blg to test td 2476 ft. Geo. L. Pace et al's Clarkson 1, 30-12-9, sd 2665 ft. (corrected depth.) Lucky Strike Oil Co.'s Chaffraix 1, 33-12-10, sd for water 1550 ft. T. G. Shaw's Wilkinson 1, 4-12-10w, lcn.

RICHLAND PARISH — Austin & McDonald's Hunt 1, 13-17-5e, set 8-in cas 921 ft. W. C. Feazel's Landrum 1, 6-16-7e, dk. International Gas Prod. Co.'s LaGrone 1, 7-16-7e, lcn abn. Island O&G Co.'s Noe 1, dr 1685 ft.

SABINE PARISH — Magnolia Pet. Co.'s Giaque 1, 26-7-14, dr limey chalk 2292 ft. McDaniels et al's Batsom 2, 16-8-12, dr 1330 ft. Loring Oil Co.'s Shull 2, 26-8-12, top chalk 2389 ft, set 6-in cas 2320 ft, dr 2393 ft. Schuffert 1, 27-8-12, set 6⅝ cas 2376 ft, blg to test 100 ft oil in hole td 2420 ft. Huber & Mann's Newton 1, 25-8-12, set 6⅝ cas 2260 ft, top chalk 2333 ft, showing oil blg to test td 2417 ft. Lanier & Tarver's Newton 1, 25-8-12, sd 90 ft wo water. Texas Co.'s Giaque 1, 27-8-12, set 6⅝ cas 2275 ft, topped marl 2273 ft, tested dry show oil 2422 ft, wo. Lacey Barkett Oil Co.'s D'Anna 1, 26-8-12, set 10-in 105 ft dr 560 ft. Ark. Fuel Oil Co.'s Russell 1, 26-8-12, lcn. Lacey Pet. Co.'s Tatum 1, 26-8-12, dr shale 2128 ft. R. L. Gay, Tr.'s Bowman-Hicks 8, 18-7-13, sd 2552 ft. Sabine Lbr. Co. 3, 15-7-14, top marlbrook marl 2116 ft, set 6⅝ cas 2104 ft, td 2116 ft. Le Grande et al's J. W. Hale 1, 1-7-13, lcn. D. H. Reddick et al's Scretchfield 1, 18-9-12, sd 3280 ft. Paramount O&G Co.'s Woolums 1, 11-6-12, changing to heavy rig td 2225 ft. Zeke Lohman's Wyatt Lbr. Co. 1, 18-4-11, partly rigged up wo. Lohman & Walker's Hubley 1, 21-7-11, set 8-in cas 1235 ft, tested dry two ft sand td 1356 ft, wo. Pelican Nat. Gas Co.'s La. Long Leaf 4, 4-7-11, coring shale 2242 ft. Sabine Lbr. Co. 3, 6-7-11, elev. 259.9 ft topped marlbrook marl 2225 ft, set 6-in cas 2222 ft, tested dry chalk rock 2408 and 2638 ft, topped Blossom sand 2812 ft, sw abn td 2821 ft. G. D. Neff, Tr.'s Turner A-1, 4-7-11, cln. Loring Oil Co.'s Garner 1, 4-7-11, dk. pat. Trammel 1, 4-7-11, dk pat. Pelican Nat. Gas Co.'s Sabine Lbr. Co. 4, 11-7-12, lcn. Stacey et al's Polly 1, 18-8-12, rig up. Longoria et al's Belton 1, 31-9-12, rig up. Boone, Tr.'s

Hill 1, 4-6-11, lcn abn. A. C. Glassell's Logan Oil Co. 1, 23-10-13, sd 1710 ft.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12, sd 2300 ft. Stovall Drilling Co.'s Miller 1, 18-10-10e, dr 1030 ft.

UNION PARISH—Fred Stovall's Murray 1, 32-23-4e, lcn abn.

WEBSTER PARISH — Sarepta Oil Co.'s Gardner 3, 6-22-10, dk. Ideal O&G Co.'s Coyle 1, 24-23-11, dk. J. P. Evans et al's Crichton 1, 31-18-8w, tested 12 fourbles sw ds 1757-1841 ft sd 1853 ft. Service Drilling Co.'s Waller Est. 1, 21-23-11, sd 3480 ft. D. H. Coyle, Tr's Frasier 1, ne se 27-23-11, lcn.

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
HARRIS COUNTY—		
Mission Drilling Co., Cook 2, 1½ mi n Crosby	*	1800
WASHINGTON COUNTY—		
W. B. Birdwell, Schram 1, 3 mi e Brenham	*	3015

AUSTIN COUNTY—O'Hara et al's Schrader 1, dr 1600 ft shale. Humble-Valley's Duncan State Land 2, Brazos River, driving piling; Hugo Hagan 1, 2 mi s Raccoon Bend, dr 1765 ft shale and lime; Fritz Lamp 1, 1½ mi sw Raccoon Bend, dr 3242 ft shale and sand.

BRAZORIA COUNTY—Thos. Faust et al's Fee 6, 2 mi s Nash dome, dr 5025 ft hard sand and lime. Rycade's Wisdom 27, Nash dome, dr 4775 ft sand and lime. Rycade & Amerada's Seaburn 1, Stratton Ridge, dr 2325 ft lime. Freeport Sulphur Co.'s Fee 2001, Bryan Mound, dr 3350 ft hard lime. Shell's Haury 1, Danbury, ru; Blakely-Winston 4, Danbury, tested salt water at 1850 ft, abandoned. The Texas Co.'s Ewing 1, Manvel, dr 7059 ft sand and shale. The Texas Co.'s J. H. Murdock 1, Fresno, dr 1021 ft shale. Mills Bennett's Poole 1, Allen dome, dr 2815 ft shale; Allen 2, Allen dome, dr 3065 ft hard sand; Reese 1, Allen dome, abandoned at 4215 ft in shale and lime. United Oil Synd.'s Mores 1, 3 mi n Danbury, sd 1450 ft.

CALHOUN COUNTY — The Texas Co.'s Thomas 1, Chocolate Creek, 6 mi w Port Lavaca, fsh 5065 ft for dr stem.

CHAMBERS COUNTY—Pure's Lost Lake 5, dr 4876 ft sticky shale. Pure-Rycade's Jackson 1, Oyster Bayou, dr 4987 ft sand, no show. The Texas Co.'s Jackson 1, Salt Cedars, dr 4901 ft shale.

FORT BEND COUNTY—Gulf's Moore 25, Moores Field, dr 975 ft gbo; Moore 26, Moores Field, dr 1275 ft gbo.

GRIMES COUNTY — Deering & Noble's Templeman 1, 6 mi s Navasota, dr 2930 ft sandy shale, show of oil. Deering et al's Muenke 1, ½ mi n Anderson, dr 1525 ft gbo.

HARDIN COUNTY—D. O. Speights' Gidrey 1, 4 mi s Batson, sd 2750 ft.

HARRIS COUNTY—Humble's Simms-Smith 78, Goose Creek, dr 4785 ft shale; Warren 8, Hockley, dr 3360 ft sandy lime; Minnetex 3, Mykawa, dr 4825 ft shale. Mrs. J. C. Baldwin's Kitzman 1, 2 mi n Cypress, sd 4247 ft. Gulf States Oil Co.'s Augspurger 1, 8 mi n Houston, dr 1100 ft sand and shale.

JACKSON COUNTY — Jackson Co. Oil Synd.'s Drushell 8, Edna, dr 3695 ft shale.

JEFFERSON COUNTY—Westbury Oil Co.'s West 1, S. Choate sur, sd 4100 ft.

LIBERTY COUNTY — Harrison Oil Co.'s Gulf Fee 1, N. Dayton, dr 4540 ft sand, show of oil. Saxet Oil Co.'s Wilhite 3, N. Dayton, dr 4380 ft hard sand. Victor Oil Co.'s Gulf Fee 2, N. Dayton, dr 5060 ft sand and shale, oil show. Gulf's Ezzell 1, Hankamer, dr 3980 ft sandy shale, show of oil. Yount-Lee's Moores Bluff 3, Esperson, blew out at 7592 ft, est 50 million ft gas. Gulf's McFadden 2, Moss Bluff, dr 4015 ft water sand. Humble's Breeden 1, Moss Bluff, dk; Hylton 1, Moss Bluff, dr 2885 ft gbo and lime; Sergent 1, Moss Bluff, ru. Rycade's Heiskell 1, 15 mi s Dayton, ru.

MATAGORDA COUNTY—Empire's Boker 1, Citrus Grove, dr 3950 ft sand. Cockburn Oil Corp.'s Hawkins 2, Shepherds Mott, lcn.

MONTGOMERY COUNTY—Price & Wilhite's Juergus 2, 3 mi Conroe, dr 2950 ft shale.

ORANGE COUNTY—Gulf's Stark 1, Port Neches, dr 5770 ft shale and lime. The Texas Co.'s Stark 2, Port Neches, dr 4870 ft hard sand and lime.

WALKER COUNTY—Joyce Richardson et at's Smither 1, 12 mi n Huntsville, sd 3450 ft.

WHARTON COUNTY—C. S. Thomas' Taylor 1, Boling, dr 1375 ft hard sand.

SOUTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
CALCASIEU PARISH—		
J. G. Sutton, Industrial Lbr. Co. 1, 19-9s-12w	*	1500

ACADIA PARISH—Yount-Lee's Houssiere-Latrielle 9, Evangeline, dr 7065 ft sand; Crowley 7, Evangeline, dr 3827 ft water sand.

CALCASIEU PARISH — Adams Oil Co.'s Roderick 1, Starks, r to bottom. J. O. Davis' Ind. Lbr. Co. 1, 20-7s-12w, dr 4650 ft water sand. Union Sulphur Co.'s Martha Moss 1, Lockport, dr 5610 ft gbo. Yount-Lee's Miller 1, Lockport, dr 6504 ft hard sand.

CAMERON PARISH — Magnolia's Sweet Lake 1, dr 6505 ft shale. Shell's Watkins 15, Black Bayou, dr 1535 ft gbo; Black Bayou State 1, dr 4500 ft shale. Freeport Sulphur Co.'s Yount-Lee 3, Black Bayou, dr 1130 ft cap rock; No. 4, ru. Vacuum's Cameron Meadows 1, 21-14s-13w, dr 4708 ft. The Texas Co.'s Calcasieu Lake State A-6, s end lake, ru; State-E. Hackberry 7, dr 3958 ft shale. Federal Pet. Co.'s Hebert 1, Hackberry, 33-12s-10w, dr 7000 ft hard sand.

IBERIA PARISH—The Texas Co.'s State Vermilion Bay 5, dr rock 6525 ft. Lake Oil Co.'s Ben White 1, near New Iberia, r to set cas at 2700 ft. Jefferson Lake Oil Co.'s Lake Peigneur 9, Jefferson Island, ru.

IBERVILLE PARISH—Standard's Wilbert 5, Bayou Blue, fsh 3225 ft; Wilbert 7, dk; Wilbert 8, dr 3145 ft sandy lime; L. Baist Cooperage Co. 1, Bayou Blue, capped piling; E. B. & S. P. Schwing 1, Bayou Blue, dr 1300 ft gbo. Shell's Wilbert 5, White Castle, dr 4700 ft sand and lime. Gulf's Gay 1, Bayou Choctau dome, dredging canal to lcn. Texas Gulf Sulphur Co.'s Wilbert 1, Bayou Choctau, dr 1600 ft sand; Wilbert 2, dr 1175 ft.

JEFFERSON PARISH—Humble's Delaware Fur Co. 1, 3 mi nw Lafitte, dr 3814 ft sandy shale.

LAFAYETTE PARISH—Pure's J. Manmotin 1, 5 mi n Lafayette, dr 6675 ft sand, no show.

LA FOURCHE PARISH—The Texas Co.'s LL & E-Leesville 1, dr 3175 ft.

PLAQUEMINES PARISH—Humble's Cockrell-Moran 2, Lake Grande Ecaille, driving piling; Cockrell-Moran 3, trying to sdtr, td 1555 ft. The Texas Co.'s Garden Island Bay State 4, dr 3600 ft sandy shale. Gulf's Buras Levee Board 1, 27-21s-30e, moving in.

ST. MARTIN PARISH — The Texas Co.'s Iberville Ind. Co. 2, Hager dome, set cas at 75 ft; No. 3, lcn. Rycade's Woodyard Lake 1, Bayou Bouillon, r at 5420 ft; State 4, Bayou Bouillon, moving in.

ST. MARY PARISH—The Texas Co.'s South Coast Co. 1, Charenton, dr 7300 ft sand and shale.

TERREBONNE PARISH — Chas. Paggi's Evergreen 2, Houma, dr 1800 ft gbo. The Texas Co.'s Bay Junop 2, 21-21s-14e, dr 2125 ft sandy shale; Dog Lake A-3, spudded; State-Caillou Island 4, lcn; No. 5, dk; Lake Pelto State 4, lcn; No. 5, lcn; No. 6, lcn; Bay St. Elaine 5, bldg foundation; State-Lake Barre 5, dr 2358 ft rock; No. 6, lcn; Four Isle 4, dr 3525 ft shale.

WEST FELICIANA PARISH — Putnam Synd.'s Como Plantation 1, 54-1-4w, twisted off dr stem at 3740 ft.

EAST TEXAS

CASS COUNTY—John C. Rogers' Lanier 1, K. A. Welborne sur, sp 10-in cas 100 ft, dr 259 ft.

HARRISON COUNTY — Shell Rock Pet. Co.'s Daugherty 1, W. D. Burris sur, sd 3520 ft.

MARION COUNTY—W. D. Chew's Fee 1, Wm. Hamilton sur, set 6-in cas 2270 ft td 2532 ft. Trammell et al's Hussey 1, Chas. Lockhart sur, sd for water 1334 ft.

PANOLA COUNTY—Texas-La. Prod. Co.'s Lawrence 1, Harrison Davis sur, sp 10-in cas 160 ft, dr 512 ft. Knott et al's Marion Durham 1, Chas. Haley sur, sd wo 2400 ft. Smith et al's Hunt 1, Albert Johnson sur, dk. Bell et al's Burnett Lbr. Co. 1, S. B. Hendricks sur, cored sandy shale showing oil arr set 8-in cas 2075 ft. Ark. La. P. L. Co.'s Brumble A-2, B. C. Jordan sur, fsh ds 4408 ft. W. G. Banks' Kyle 1, J. Tippett sur, lcn. Warren & Dawes' McNeese 1, A. Booker sur, dk. Natural Gas Prod. Co.'s Tom Moore 3, B. C. Jordan sur, set 6⅝ cas 4400 ft.

SABINE COUNTY—Loring Oil Co.'s Nona Mills Lbr. Co. 1, Jas. Mason sur, dr chalk rock 2950 ft.

SHELBY COUNTY—O. R. Ridgeway's Parker 1, Jesse McKelvey sur, dk. Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd 3300 ft.

SOUTH TEXAS

ATASCOSA COUNTY—Frontier Oil Co.'s Boynton 2, sw of old Brown-Fuller gas well in John Sharp survey, td 1780 ft, dr at 1710 ft, well went into gas formation which blew about six feet above top of csg with heavy mud in hole and pumps running.

BASTROP COUNTY—Champion Bros.' H. B. Smith 1, 1 mi w of Elgin, td 1200 ft, dr in Taylor marl. Pacific O&G Co.'s J. M. Lytton 1, 150 ft from n and e lines, ru; Spooner 1, 4½ mi e of Cedar Creek, td 2350 ft, sd. Chas. Long's McWilliams 1, offsets L. I. Dowdell No. 1 Brundidge well, lcn. Sarsfield-Wilson's J. A. Walker 1, 8½ mi ne of Elgin, td not reported, sd for water. Wheeler's McDay 1, td 1308 ft, dr in Cook mountain formation.

BEXAR COUNTY—C. S. Bowman's Riddler 1, 1000 ft from s and w lines of 700-acre tract in survey No. 5, dk. Eckert and Son's John Brehn 1, 400 ft s of No. 6 Sandemer in Dobrowolski pool, td abt 500 ft, dr. KMS Pet. Co.'s E. Salicky 1, Mission Garden sur, no report. August Magel et al's Beck 1, Dobrowolski area, lcn. Morosos and Collin's (formerly Edminston et al) Hamberdale 2, 1 lcn from No. 1 in Dobrowolski pool, td 680 ft, being completed. Moore & Juar's Ellison 1, 14 mi w of San Antonio, td 2110 ft, csg set top of sand to test, fsh at last report. Morgan et al's Masterson 3, n end of lease in Dobrowolski pool, td 685 ft, completed, prod. abt 5 bbls. Penn Oil Co.'s Cooksey 1, J. W. Ball sur No. 1, prep to sp. Penn-Tex Oil Co.'s Sandemer 4, Menchaca sur No. 52, td 565 ft, dr. Russel & Moore's Mills 2, Angel Navarro sur, td 700 ft, dr. Snyder & Reeves et al's Glasscock 2, 12 mi ne of San Antonio, td 600 ft, dr. Swearingen Oil Co.'s Fee 7, 300 ft w of No. 6, lcn. Watson et al's Gembler 1, 1300 ft from w line and 2250 ft from e line of G. Texada survey, 1½ mi e of S. A., prep to ru. Weilbacker & Associated's Ernest 1, 6400 ft from s and 900 ft from w line of J. Christoper sur, dk.

BLANCO COUNTY — Anderson & Manning's Speer 1, John W. Speer sur, prep to sp in. Adams & Lysles' Leeders 1, 5 mi nw of Blanco City, td 450 ft, dr. D. J. Meeks' E. W. Walker 1, Noel Nixon sur No. 23, td 620 ft, dr. C. L. McCreary's Kiers 1, Scherling subdivision, td 560 ft, dr. Forest Oil Co.'s (Rosenfield et al) Hohenberger 1, sur 94, td 100 ft, dr. H. Sitton's McMillen 1, 2 mi w of Blanco, ru, dr water well, to sp shortly.

BROOKS COUNTY—Ed East's (Miller and Albricht) Braulia G. De Garica 2, Mastina y Gonzalena tract, td 400 ft, set 6⅝-inch csg, now standing. Houston Oil Co.'s Wormser-Holbein 2, Palo Blanco Manguellos grant, td 3621 ft, tested gas 3610-16 ft, set csg at 3607 ft, bailing. Humble's Singer 2, sec 312, 1 mi s of Lasater field, td 4775 ft, set 6⅝-inch csg at 4769 ft, sand at 4769-75 ft, showed gas testing. Southern Crude Oil Purchasing Co.'s Holbein-Wormser 1, 4 mi s of production in Lasater field, td 2770 ft, dr.

CALDWELL COUNTY—Humble's New 6, Burner field, td 2749 ft, top of lime 2730 ft, prod abt 200 bbls initial.

DUVAL COUNTY — Humble's Koehler 40, survey 172, lcn aband. Mag. Pet. Co.'s Hahl Norton 1, Pointevent sur, td 2314 ft, set csg 2307 ft, prod 75 bbls of oil. W. E. Mulholland's Benavides 2, td 2820 ft, dr deeper, tested oil gas and salt water at 2738 ft, at 2799-2803 again tested salt water. Vacuum Oil Co.'s Duval Ranch Co. 1, survey 280, dr water well last report.

EDWARDS COUNTY — James Dalgish et al's Sid Peterson 3, Warner Ranch, td abt 2600 ft, dr. Phillips Pet. Co.'s Holman 2, sur No. 25, td 4580 ft, dr.

GOLIAD COUNTY—A. G. Rheimenschnei-

der, Trustee's, A. T. Fromme 1, Peter Dexter sur, td 1912 ft, dr. Union Prod. Co.'s Ray 27, Jabian Gomez sur, lcn; Ray 28, 150 ft from s line and 800 ft from w line of 416.5 acre E. Ray tract, 2 mi due e of line of Union No. 3 Ray, lcn; Ray 29, 450 ft from n line and 215 ft from w line of AB&M 621. acre survey, 2 mi due e of No. 3 Ray of Union, lcn.

FRIO COUNTY—W. H. Wray's Barns 1, sec 123, total depth 100 ft. United North and South Dev. Co.'s Little 1, J. J. & Sallie Little ranch, sp in 8/26/30.

GONZALES COUNTY—Lake & Thompson's Campbell 1, Saturn area, no rept. Linden Pet. Co.'s Hensley 1, James Smith sur, td below 4460 ft, top of chalk abt 4400 ft. John Mauldin's (Finnell and Elam) Robinson 2, td 3256 ft, tested showed some oil, sd for water, to lay line.

GUADALUPE COUNTY—Cranfill-Reynolds' Meyers 1, J. Cantu sur, lcn. Grayburg Oil Co.'s Wells 2, James D. Baume sur, 6 mi sw of Darst Creek, td 3028 ft, dr. Gulf Prod. Co.'s Thomas Dix 3, 450 ft s of e corner and 150 ft from ne line of tract, td 1225 ft, dr; Thomas Dix 4, td 1265 ft, dr; Posey-Baker 6, td 818 ft, dr;Posey-Baker 7, td 1154 ft, dr; Thomas Dix 5, td 100 ft, dr; Molear 3, td 2450 ft, dr; Cercy Anderson 3, dk; Knoblock 3, 150 ft from ne and se lines of tract, lcn; Posey Baker 8, 1000 ft from sw and 150 ft from nw lines of tract, lcn. Louisiana Oil Ref. Co.'s Dix 6, prep to sp in; Dix 7, 750 ft from se line and 150 ft from nw line of tract, lcn. Mag. Pet. Co.'s Dix 8, 800 ft from sw line and 150 ft from w line, lcn; Richburg 4, td 2306 ft, prep to dr in. csg set about 2295 ft, reported in crevice. New Braunsfels O&G Co.'s Seidman 1, 1 mi se of New Braunfels in the Seguin road, td below 2000 ft, dr. Suttle et al's Baenziger 2, A .Manozla sur, td not rept, dr. Sun Oil Co.'s Knoblock 9, 700 ft from ne line and 150 ft from se line of lease, lcn; Knoblock 10, 1330 ft from ne line and 150 ft from se line of tract, lcn; Knoblock 11, 150 ft from ne line and 150 ft from se line, lcn. The Texas Co.'s Knoblock 9-B, 150 ft from se and sw lines of tract, lcn; Posey Baker 6, 150 ft from nw and ne lines of tract, lcn; Henry Willie 6, 150 ft from n line and 200 ft from w line of tract, lcn.

JIM HOGG COUNTY—Cole Pet. Co.'s Cole 1, W. P. Allen Ranch, lcn; Wood 1, blk 16, sur 82, ru. North and Walton's Allen 1, W. P. Allen ranch, lcn. Wm. H. Barnhart's McCampbell ranch 1, blk 33, 9 mi s Hebbronville, td 150 ft, dr. E. E. Watts, Agt.'s, Gomez 1, sur 125, td 390 ft, dr, gas and oil sand at 125-31 ft.

KENDALL COUNTY—Borget et al's Wallie Haag 1, td 1256 ft, sd. R. M. Perkins', J. Lawhon 1, J. Lawhon sec 10, td 700 ft, dr. Dixon et al's Behr 1, 3 mi se Sisterdale, td below 2250 ft, dr. Molwinkle et al's Karston 1, 1 mi w of Kendalia, td 1340 ft, dr. Permian Oil Co.'s Boles 1, 5 mi ne Boerne, mv on. P. B. Sterling's McCrocklin 1, C. B. Owen sur, td 850 ft, sd on top of pay lime, to re-dr Monday. Hardy Sitton's W. B. Garvin 1, td 760 ft, sd.

KERR COUNTY—Mashe & Trunstill's Jeff Love 1, Western Kerr County section 1594 ft, td 1400 ft, dr.

KINNEY COUNTY—Blume et al's Herbst 2, td 300 ft, sd. Mag. Pet. Co.'s Wardlow 1, Blaez sur, td 3150 ft, dr. Mardon Oil Co.'s Clamp 2, td not reported, dr.

LIVE OAK COUNTY—Houston Oil Co.'s Snyder 1, E. Garner sur 253, clearing location; Booth 1, td 2500 ft, aband hole, skid rig for another test; Cartwright 22, td 5425 ft, dr. Larco Gas and Pet. Co.'s Wallace D. Wade 1, 5 mi n and e of Sandaria on 10,000 acre blk in Live Oak and Jim Wells, lcn. Markley et al's Reeves-Brown 1, J. E. King sur, dk. Penn Oil Co.'s Lyne 1, 10 mi sw of George West, td 100 ft, dr.

MAVERICK COUNTY — Rycade Oil Co.'s Chittim 5, sec 129, td 4765 ft, sd for water; Sullivan 5, sec 82, td 6902 ft, dr.

McMULLEN COUNTY—Mogul Pet. Co.'s Martin 1, 150 ft from nw anw sw lines of E. Meloy sur, 15 mi sw of Tilden, sp in, no later report.

MEDINA COUNTY—Calco Pet. Co.'s Crawford 1, td 2194 ft, sd, to re-dr, top Austin at 1978 ft, abt 250 ft high. Natl Oil Co.'s Howard 1, John George sur, td 1645 ft, set 6⅝-inch csg at 1610 ft on top of sand, cored saturated sand, 35 ft, to dr in shortly.

NUECES COUNTY — Grimm & Yakey's Land Ranch 1, 7½ mi ne of Agua Dulce field, 2½ mi ne Banquet, lcn. Goucher Dr. Co.'s 1, 1½ mi n of Robstown, lcn. Houston Oil Co.'s Rand Morgan 1, td 1670 ft, set and cement 9⅝-inch csg, gas sand topped at 1659 ft, dr in. Independent O&G Co.'s C. Baldwin 1, 2½ mi w of Corpus Christi, td 4260 ft, coring and reaming. Saxet O&G Co.'s (Pearson et al) Donigan 2, 6 mi w of Corpus Christi, dk up. Slush pits dug, start ru immediately.

SAN PATRICIO COUNTY—Jacob, Bussini & Pickett's J. C. & Bobby Baldwin 1, ½ mi e of Sinton, td 4020 ft, sd mv on heavy rig, to re-dr. J. L. Kenedy's Lolie McRae 1, 3½ mi se of Houston Boothe well, mv on. Peterman Oil Co.'s O. K. Crow 1, 2 mi s of Sinton, td 1500 ft, dr, set 800 ft surface csg; Foster 1, 150 ft from e line, 1420 ft from n line, blk 5, of Welder-Coleman-Fulton subdivision, 3½ mi w of Sinton, lcn. Saxet Oil Co.'s Carroll 1, Taft subdivision, to sp in. Union Prod. Co.'s Welder 4, td below 3500 ft, dr.

STARR COUNTY—Nuguna Oil Co.'s Kelsey-Boss ,porcion 75, lcn temp aband. Mrs. J. L. Smith's Walch 1, td 916 ft, dr in hard rock. Jush & Duerkson's Kelsey-Boss 1, blk 9 subdivision porciones 75, 76, 77, td 520 ft, dr. Los Olmos Oil Co.'s Kelsey-Boss 1, blk 6, td 50 ft, dr. Texas Co.'s Guerra "A" 5, share 305, "C" porcion 67, sp 9/1/30, dr 200 ft.

UVALDE COUNTY — Phantom Oil Co.'s Caludt 1, survey 661, td abt 2482 ft, dr.

VAL VERDE COUNTY—Atlantic Oil Prod. Co.'s Reynolds & Miller 1, td 750 ft, dr. A. Blume's Yoast 1, blk 3, I&GN sur, td 800 ft, sd. Independent Operators' Whitehead 1, blk 4, I&GN sur, td 5376 ft, sd for csg. O. O. Owens et al's Mills 1, sec 128, blk 1, I&GN survey, td 6742 ft, reaming. Phantom Oil Co.'s Ingram 1, sec 33, blk D-8, td 3035 ft, dr by tools. Valvert Oil Corp.'s Bassett 1, center ne sec 47, blk Y, td 4000 ft, sd.

VICTORIA COUNTY—Atte Dr. Co.'s J. C. West 1, td 1525 ft, still sd. Houston Oil Co.'s McFadden 1, C. L. Mann sur, td 2450 ft, dr. Lion Oil & Ref. Co.'s McFadden 2, Bloomington district, td 4460 ft, dr. The Texas Co.'s McFadden 1, 6 mi s of Bloomington, td 3890 ft, dr, dst 3707-12 ft, showed 2000 ft salt water.

WEBB COUNTY—J. L. Elliott's Esperanza Land and Livestock Co. 2, 12 mi w of Encinal, td 1980 ft, standing. Cattlin & Matthews' Garza 1, survey 413, Muckleroy field, ru. O. W. Killam's Bruni 19, td 2322 ft, set csg at 2318 ft, prod 35,000,000 cu ft of gas and 750 lbs of rock pressure; Bruni 12, blk 22, Albercas Grant, td 3100 ft, sd; Bruni 1, sec 1 of Billings ranch, td 1800 ft, sd; Slater Ranch 2, lcn, complete water well; Bruni 5, td 2600 ft, plug back to 2400 ft, to make gasser. Mag. Pet. Co.'s Wright 1, survey 674, dk; Jones 1, survey 674, td 3670 ft, dr. Geo. S. Marshall's Garcia 2, td 2405 ft, failed to get test in sand at 1860 ft, sand 2398-2405 ft shows oil testing through tested. Trussell, Cezeaux & Partee's Bruni 1, td 2340 ft, sand 2335-2340 ft testing through tester. Washington-Texas O&G Co.'s R. O. Benavides blk 16, sec 268, ru; Barnsley 1, td 2332 ft, top of sand 2305 ft, tested big gasser, csg set 2305, waiting on cement. O. W. Killam's Villegar 1, Reiser field, dk; Slater 1, Bergo grant, td 1790 ft, temp standing on water. South Texas Prod Co.'s Yeager-Stroman 1, td 2076 ft, sand 2075 ft, tested some gas, coring deeper.

WILLIAMSON COUNTY — W. D. Anderson's M. V. Lawrence 7, td 2242 ft, csg set; M. V. Lawrence 8, lcn; Simmons 5-A set csg 1465 ft; T. P. Simmons 6, lcn; S. J. Smith td 2575 ft, sd for water. Bartlett & Wilson's R. E. Stewart 1, td 920 ft, prod 25 bbls; R. E. Stewart 2, td not reported, dr. E. L. Chapman's J. C. Abbot 1, discovery well, cleaning out and running tubing; F. Fuchs 1, td 970 ft, sd. J. L. Collins' M. V. Lawrence 5, td 1462 ft, sd for water; M. V. Lawrence 7, 27 acre tract in S. Miller sur, lcn. E. E. Ertel et al's H. Swenson 1, sd for water. Wilott and Chapman's A. J. Carlson 1, td 40 ft, sd. Haska Bros.' Garzel 1, e of Chapman field, contract let for test; Salyers, 1, contract let for test. McIntyre et al's B. Lawrence 1, prod 300 bbls. A. J. Luke's Simmons 1, H. Owen sur, td 2210 ft, sd in serpentine account water. W. C. Marshall's R. A. Krueger 2, td 2950 ft, sd. Manning & Anderson's Cooper 1, td abt 1300 ft, sd for water. Martin et al's S. H. Jarrell 1, td 40 ft, sd. Paul Vitek's Kilgore 6, td 1550 ft, prod 500 bbls. G. Stratton's J. C. Abbott 5, S. Miller sur, sd for water. A. M. Keisker's E. L. Chapman 1, dk. Jesse Tomberlin's Partain Bros. 1, td 1410 ft, sd. Texas O&G Dev Co.'s Gerrert & Allison 1, 9 mi ne Taylor, td 40 ft, sd. Westbrook et al's T. P. Simmons 6, td 1982 ft, dry. R. S. Wilson et al's C. Sitman 1, T. A. Moore sur, td 2850 ft, sd for water; No. 1 Walker td abt 950 ft, dr. Andy Anderson et al's Forwood 1, td 998, completed putting on pump, estimated 50 bbls.

ZAPATA COUNTY—Alamo Dr and Leasing Co.'s Trevino 6, Claggett lease, td 200 ft, dr; Trevino 6, Blair lease, lcn. Allied Gas Co.'s Trevino 16-A, lcn; Trevino 3-B, td 1268 ft, csg 1234 ft, prod 50 bbls; Trevino 4-B, td 1278 ft, set 1273 ft, prod 60 bbls. Allied Gas & Allen Morris' E. Guitterrez 61, td 1270 ft, csg set 1258 ft, prod 75 bbls; E. Guittierrez 7, lcn; E. Guittierrez 8, lcn; E. Guittierrez 9, lcn. Arnold & Ahler's Wicker et al Garza 3, ru. Blankenship & Nix's Montemayor 4, td 1286 ft, set csg at 1270 ft, prod 65 bbls of oil. Blair & Son's Guittierrez 1, share 2 Comitas Grant sw of Muckleroy field, td 720 ft, dr. Edgington & Niles' Trevino 2-A, td 1100 ft, dr; Trevino 5-B, lcn. Nordan-Morris et al's Bustamente 2, 150 ft ne of center of line, td 1427 ft, sand at 1426 showed gas; Trevino 1, blk 5, sec 412, td 1310 ft, plugged; E. Bustamente 1, Comita Grant No. 7, lcn; S. Bustamente 1, Comitas Grant No. 34, lcn. Henne & Winch's Bustamente 2, td 1396 ft, coring. Harrison et al's de la Santos 1, share 6, Comitas ranch, td 600 ft, dr; de los Santos 2-C, share 7, Comitas ranch, td 870 ft, dr. Keene & Jackson's Garza 1, blk 59, Comitas Grant Zoro pasture, td 600 ft, dr. O. W. Killam's Lopez 1, td 2490 ft, sd; Lopez 3, sur 75, td 1738 ft, sd; Cuellar 27-C, td 1581 ft, set csg 1572 ft, prod 100 bbls; Cuellar 26-B, td 1569 ft, csg set 1558 ft, testing; Hennant 1, sec 72, td 1515 ft, dr; Cuellar 28 "C", td 150 ft, dr. Lincoln O&G Co.'s Wormser 1, td 350 ft, dr. Natl Oil Co.'s Adams 1-A, 150 ft n of No. 1 in Borego Grant, td 696 ft, sand 689-696 ft, shows gas, testing thru tester; Luther et al 1, lcn. B. F. Nixon's Guitterrez 1, Particion No. 10, Borrego Grant, td 200 ft, dr. John Papas Inc.'s Flores 1, Porcion 350, dk. Penn-Tex Oil Co.'s Benavides 3-F, ru, laying water line. Penny Prod.'s Trevino 1, 12 mi sw of Muckleroy field, td 782 ft, completed as water well; Cuellar, Pappas sur, td 400 ft, dr; Trevino 2, 111 ft nw of No. 1, td 510 ft, shallow gas, dr. W. R. Shankle's Trevino 7, td 1100 ft, dr; Guittierrez 3, td 1200 ft, dr. SRC Corporation's Cuellar 9-B, td 1273 ft, dr, no later report; Cuellar 14-B, td 2200 ft, dr. Smith-Clark's Montemayor 1, td 1820 ft, dr. T. W. Work's Urbie 1, share 7, Borrego Grant, ru.

ZAVALLA COUNTY — Anglin O&G Co.'s Pryor 5, td 1109 ft, sd; also making lcn w of La Pryor. Cromwell et al's Whitecotton 1, dk. Gribbs & Davidson's Weatherby 1, near Loma Vista, td 1782 ft, sd. Texas Gas & Fuel Co.'s Pryor 3, to make lcn. Weigand Bros' Gates 1, td 2540 ft, sd.

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
DELTA COUNTY—		
Hazel-Curtis Oil Co.'s T. J. Irwin 1	*	3060
TITUS COUNTY—		
Deep Rock Oil Co. et al, F. M. Autry 1	*	4000

BOWIE COUNTY—Joe Burham et al's G. W. Burnett 1, M. H. Janes sur, sp and sd. Lee Timberlake et al's J. Tidwell 1, Jas. Eskell sur, elev 286 ft, top Pecan chalk 1229 ft, reaming hole for drill stem test at 2585-2610 ft.

CAMP COUNTY—McDonald Bros.-Atlantic Oil Prod. Co. et al's B. D. Tillery 1, J. H. Murphy 1, rig.

CASS COUNTY—Phillips Pet. Co.'s J. R. Olds 1, materials.

CHEROKEE COUNTY—H. J. Cox et al's Farris (Geo. Davis) 1, P. Bean sur, dk.

DELTA COUNTY—C. A. Everts et al's J. A. Smith 1, J. W. Renfro sur, elev 525 ft, Pecan chalk 355-399 ft, dr 2180 ft. Delta County Dev. Co.'s M. E. Hays 1, J. B. Anderson sur, elev 503 ft, Pecan chalk 421-481 ft, fsh 3010 ft.

ELLIS COUNTY—C. G. Foster & S. C.

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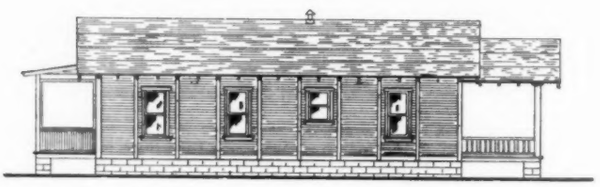

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Richardson's Moise-Cerf 1, LaPena sur, elev 440 ft, sd for water 2187 ft. E. M. Rogers et al's J. L. Winn 1, O. Wheeler sur, sd 160 ft. The Triangle Corp.'s W. B. Hale 1, B. Smith sur, Austin chalk 78 to 437 ft, Woodbine sand 836 to 1120 ft, dr Trinity sand 2950 ft.

FANNIN COUNTY—North American Pet. Co.'s Allen 1, W. A. Broadfoot sur, sd 1400 ft. Ed. V. Parsons et al's Morgan 1, J. E. English sur, elev 668 ft, cas trouble, sd 3410 ft. E. M. Rogers et al's Mrs. E. C. Swain 1, J. Tolgade sur, sd 1500 ft.

FRANKLIN COUNTY — Harper-Byers et al's A. J. Laws 1, D. G. Rogers sur, sp and sd.

HENDERSON COUNTY—H. B. Ashburn et al's T. E. Terry 1, Arron York sur, elev 397 ft, sd 2510 ft. L. G. Bradstreet & Co.'s J. J. Shaughnessy 1, John Isard sur, elev 548 ft, Pecan chalk 2560-2734 ft, top soft Austin chalk 3547 ft, top solid chalk 3595 ft, dr chalk 3745 ft. E. L. Chapman et al's Cade 1, Simon Weiss sur, elev 340 ft, top Pecan chalk 3170 ft, fsh 3200 ft. Geo. L. Pace et al's S. Anthony 1, J. M. Betram sur, elev 410 ft, Pecan chalk 2252-2694 ft, sd 2730 ft. Sunray Oil Co.'s R. H. Davis 1, E. G. Harris sur, Pecan chalk 2536-2694 ft, Austin chalk 3540-3998 ft, sd in shale 4200 ft.

HUNT COUNTY — Mrs. Mamie S. Hammonds-F. B. Branson & C. A. Kelsey's J. S. West 1, Jas. Rhodes sur, elev 505 ft, Pecan chalk 1310-1365 ft, Austin chalk 1415-1815 ft, sd in salt water 2781 ft. R. J. Worthington Oil & Dev. Co.'s W. H. Adams 1, lcn.

KAUFMAN COUNTY—Otto R. Winter & Coastline Explorations, Inc.'s, John Barrow 1, R. A. Terrell sur, elev 538 ft, Austin chalk 2283-2667 ft, dr 2850 ft.

LIMESTONE COUNTY — Haley-Heeman's Wilkes 1, J. Breeding sur, elev 421 ft, sd 1444 ft.

MORRIS COUNTY—East Texas Dev. Co. (Tucker-Fullwood-Cook's) P. M. Staggers 1, G. Forbes sur, elev 370 ft, top Pecan chalk 2525 ft, sd 3070 ft.

NAVARRO COUNTY—O. W. Killam-Phillips et al's L. N. Wilson 1, elev 391 ft, Austin chalk 1157-1497 ft, sd 3118 ft. Young et al's J. H. Farmer 1, Robt. Finley sur, top Austin chalk 787 ft, sd 960 ft. L. G. Priest et al's Henry Albritton 1, H&TC Ry. sur, lcn.

RAINS COUNTY—Everett & Morrison's F. Franklin 1, J. Christian sur, sp and sd.

RED RIVER COUNTY—E. L. Chapman et al's Morris-Guest 1, S. Lakin sur, sd 1505 ft.

RUSK COUNTY—Benedum-Trees Oil Co. & Clem S. Clark's Mrs. M. R. McCafflin 1, E. Blackburn sur, elev 406 ft, top Pecan chalk 2190 ft, dr 2360 ft. C. M. Joiner et al's Mrs. Daisy Bradford 3, Juan Ximinez sur, elev 390 ft, Pecan chalk 2590-2744 ft, base Austin chalk 3490 ft, sd for casing after showing oil and gas during drill stem test at 3536-92 ft. Moss et al's Mathews 1, top Pecan chalk 2296 ft, sd 2330 ft.

SMITH COUNTY—Owen-Sloan Oil Co. & R. H. Davis' J. H. Starnes 1, J. W. Allen sur, elev 417 ft, top Pecan chalk 2738 ft, dr chalk 2825 ft. T. B. Slick & Winona Oil Co.'s M. Freeman 1, A. J. Lagrone sur, elev 498 ft, top Pecan chalk 2955 ft, sd cont. comp. 3538 ft. Sun Oil Co.'s Oscar McGehee 1, Thomas Quevedo sur, rotary rig. Thayer & Rogers' Dr. Willingham 1, Jacob Herrin sur, lcn.

VAN ZANDT COUNTY—Bethel Oil Co.'s P. Smith 1, M. Neal sur, elev 435 ft, Pecan chalk 2555-2790 ft, Austin chalk 3865-4009 ft, sd 4603 ft. D. H. Byrd et al's C. H. Morris 1, P. Piles sur, elev 570 ft, dr 1060 ft. E. L. Chapman et al's Chas. T. Wolverton 1, Wm. James sur, elev 515 ft, Pecan chalk 2810-3106 ft, base Austin chalk 3409 ft, sd 3515 ft; Wolverton 2, sd 510 ft. Chas. F. Kolp et al's C. H. Mathews 1, W. H. Bruce sur, elev 409 ft, Pecan chalk 2085-2190 ft, top Austin chalk 3072 ft, sd shale 3637 ft. L. G. Priest et al's Blanche Blewett 1, E. Porter sur, elev 610 ft, Pecan chalk 2795-2957 ft, fsh 3003 ft. Texas Chief Oil & Roy. Co.'s J. P. Porter 1, F. Montgomery sur, elev 548 ft, dr 2460 ft. Vanco Oil Co.'s Wages 1, dk.

VAN FIELD—Geo. Anderson & E. E. Fogelson's Sanger (8-ac strip) 1, elev 509 ft, Pecan chalk 1565-1694 ft, Austin chalk 2471-2615 ft, running tubing to complete in broken Woodbine sand 2750-2927 ft; Mrs. W. A. York (strip lse.) 1, dk. Broderick & Calvert's M. F.

Shirley (2.07-ac strip) 1, dr 740 ft. E. L. Chapman et al's Clark 1, dk blown down. Cranfill-Germany, Inc.'s L. L. Swain (4½-ac strip) 1, rig. Hartt Pet. Co.'s O. L. & L. L. Swain (2.3-ac strip) 1, dk blown down. Helms et al's C. E. Bogue 1, Marshall University sur, sd 680 ft. Hill & Hill's Maxfield (¼-ac strip) 1, rig dismantled. Humble O&R Co.'s R. S. Blake 3, rig; L. A. Dowdle 1, top chalk 2565 ft, cem cas 2942 ft. Imperator Oil Corp. et al's Carter (strip) 1, dk. Imperator & Paul Vitek's G. J. Luther (3.01-ac strip) 1, elev 447 ft, top pecan chalk 1653 ft, top Austin chalk 2630 ft, sd 2665 ft. Roy Jenkins et al's M. E. Davis 1, dr 2660 ft. Kraft-Kelsey & Pure Oil Co.'s Wylie Enas (strip) 1, J. Prado sur, sd 1328 ft. Pure Oil Co.'s A. D. Clark (24-ac) 5, cem cas 2737 ft; A. D. Clark (4-ac) 1, rig; A. D. Clark (17-ac) 1, top Pecan chalk 1644 ft, fsh 2800 ft; W. H. Cook 1, lcn; B. E. Crim 1, top Austin chalk 2510 ft, cem cas 2868 ft; J. F. Crim (40-ac) 1, tested dry, cem cas 2981 ft; J. F. Crim 2, lcn; Mrs. J. E. Crumbie 1, dr 2800 ft; V. T. Davis 1, dk; R. A. Howell (25-ac) 1, top Austin chalk 2296 ft, cem cas 2639 ft; A. H. Humphreys 1, cem cas 2799 ft; I. D. Miller 1, top Austin chalk 2455 ft, cem cas 2788 ft; W. E. Morris (79-ac) 1, top Austin chalk 2548 ft, cem cas 2794 ft, td 2829 ft; J. T. Petty 1, cem cas 2660 ft; M. F. Shirley 1, cem cas 304 ft; O. L. Swain (40-ac) 1, cem cas 2350 ft; W. F. Swain (22-ac) 1, cem cas 2722 ft; W. F. Swain (40-ac) 2, dk; J. T. Taylor 1, lcn; J. T. Thompon 9, lcn; A. R. Tunnell 3 and 4, lcns; H. P. Tunnell 1, cem cas 2820 ft; Van School (5-ac) 2, cem cas 2662 ft; R. L. Wells 5, dk; Wells 10, cem 2572 ft; Wells 11, lcn; W. A. York 1, coring oil sand 2285 ft; York 2, lcn. Shell Pet. Corp.'s J. T. Taylor 1, sp; E. L. Fowler 7, lcn. Sun Oil Co.'s I. W. Thompson 3, dk. The Texas Co.'s G. W. Carter 2, Pecan chalk 1620-1750 ft. Austin chalk 2633-2796 ft, sd dry hole in Eagleford shale 2934 ft; R. V. White (34.7-ac) 2, cem cas 2734 ft. Van Joint Account's W. E. Morris (3-ac) 2, cem cas 2597 ft. Ventex Oil Co. (Paul Vitek's) L. A. Smith (2-ac strip) 1, wooden dk.

WOOD COUNTY—Wood County Dev. Co.'s Ricks 1, Daniel Fuller sur, sd 1000 ft.

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CRANE COUNTY—		
C. C. Duffey et al, Cowden 1-C....	*	2815
GARZA COUNTY—		
H. C. Cate & Mel Richards, Stoker 1	*	3050
JONES COUNTY—		
Gibson & Johnson, Hudspeth 1	*	2860

ANDREWS COUNTY—Deep Rock Oil Co. et al's W. J. Mathis 1, elev 3193 ft, top salt 1730 ft, flowing 30 bbls oil via tubing, td 5088 ft. Fuhrman Pet. Corp.'s W. T. Ford 1, elev 3186 ft, making 30 million ft wet gas, trying to kill gas 4062-4168 ft. Martin-Maer & Kell's Meadors 1, elev 3288 ft, top salt 1705 ft, dr 4170 ft.

BREWSTER COUNTY—Trans-Pecos O&G Co.'s Jones 1, elev 3073 ft, sd 2510 ft.

COKE COUNTY—Arkansas Fuel Oil Co.-Dixie Oil Co.'s Stepp 1, ur 4315 ft.

CONCHO COUNTY—W. C. Beesley et al's Sam Waring 1, sp and sd. A. W. Turner et al's Brosig 1, sd hfw 1550 ft.

CRANE COUNTY—Cranfill Bros. Oil Co.'s J. T. Muir 1, sp and sd. Cranfill Bros. & Gulf Prod. Co.'s Tubbs 1, elev 2526 ft, top salt 505 ft, top white lime 2445 ft, bailing with 2000 ft, sulphur water at 4055 ft.

CROCKETT COUNTY—Magnolia Pet. Co.'s A. C. Hoover 2, top salt 865 ft, dr 1285 ft. McMan O&G Co.-Amerada Pet. Corp.'s Powell 2, top salt 1005 ft, dr 1650 ft.

CULBERSON COUNTY — Grisham-Hunter Corp.'s W. D. Garren 2, elev 4325 ft, top Delaware 1273 ft, sd 1520 ft. W. L. Kornrumpf et al's Garren 1, sd 910 ft.

ECTOR COUNTY—Southern Crude Oil Pur. Co.'s Cowden 1, elev 3053 ft, top white lime 4020 ft, flowing 30 bbls 29.7 gravity il by heads and dr lime 4062-4218 ft. H. F. Wurtz et al's Ibbetson 1, elev 2840 ft, top salt 865 ft, sd 2375 ft.

EDWARDS COUNTY — Phillips Pet. Co.'s Holman 2, dr 5455 ft.

FISHER COUNTY—Cranfill-Reynolds Co.'s

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GLASSCOCK COUNTY—Ed. Timberlake et al's Meek 1, elev 2575 ft, top lime 2670 ft, sd 2965 ft. World Oil Co.'s McDowell 3-c elev 2537 ft, sd 680 ft.

TOM GREEN COUNTY—Belding & Dutton's Norsworthy 1, co 440 ft. Mintex Oil Co.'s Campbell 1, dr 1485 ft. Phillips Pet. Co. et al's Jennings-Gulden 1, dr 3480 ft. D. W. Wiley et al's Ed. Maier 1, sd 815 ft.

HOWARD COUNTY — Greene Prod. Co.-Getty Pet. Corp.'s Denman 1, dr 1830 ft; Snyedr 1, sp and sd. Meriwether Oil Co.'s Smith 1, elev 2590 ft, top lime 3010 ft, plugging to abn 3270 ft.

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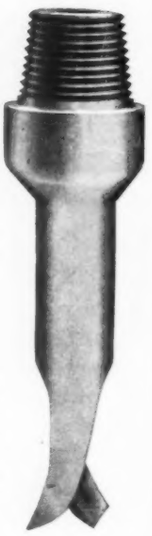

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HUDSPETH COUNTY—Geo. R. Thieson et al's University 1, sp and sd.

IRION COUNTY—Burton et al's Nutt 1, lcn. J. E. Bristow et al's Nutt 1, dr 1380 ft. Central Oil Co.'s Nutt 1, lcn. Carl Cromwell et al's Tankersley 1, elev 2520 ft, sd 1710 ft. Straughn & Texannati Oil Co.'s Tankersley 1, machine. F. E. Webb et al's J. M. Nutt 1, lcn; W. H. Williams 1, sd 100 ft. P. H. Williams et al's Ashe 1, sd 8900 ft; Noelke 1, co 960 ft.

JONES COUNTY—C. R. Pope et al's Swann 1, dr 510 ft. McBest et al's Roberts 1, sp and sd.

LOVING COUNTY — Arkansas Fuel Oil Co.'s W. W. Dean 1, dk. The California Co.'s Reagan 2, elev 2686 ft, top salt 735 ft, testing oil and water at 4218-21 ft; Reagan 3, elev 2687 ft, top salt 726 ft, dr 3700 ft; Reagan 4, elev 2738 ft, top salt 790 ft, dr 3590 ft. A. R. Eppenauer Drlg. Co. et al's Allen 1, fsh 215 ft. Geo. A. Henshaw et al's Reagan-McElvain 1, elev 2689 ft, top salt 745 ft, dr 2970 ft; Russell 2, salt 755-4038 ft, top black lime 4227 ft, swab dry after shot 240 qts at 4250-4300 ft, td 4360 ft. Miller-Burge & Healy's Chapman 1, top salt 750 ft, sd 2700 ft. Joe Rush et al's Wheat 1, top salt 785 ft, dr 3930 ft. Lee O. White et al's Russell 1, top salt 750 ft, dr 3320 ft.

MENARD COUNTY—W. C. Barnett et al's Callan 3, elev 2077 ft, sd hfw 1255 ft; Callan 4, machine. L. G. Priest et al's J. P. Sorrells 1, elev 2279 ft, dr 2520 ft.

MIDLAND COUNTY—Kerwin & Nordon Oil Co.'s Mathena 1, sp and sd.

PECOS COUNTY—Barnes et al's Sanford 1, elev 2518 ft, dr 1180 ft. E. L. Chapman et al's Streety 1, elev 2653 ft, sd 2200 ft. Crosby Prod. & Roy. Co.'s Cordova 1, set 65/8 cas 2080 ft. Curry & Eakin's Pecos Valley 1, dr 1415 ft. C. L. Dittman et al's H. J. Eaton 1, sp and sd; Eaton 2, lcn; Eaton (Sec. 37) 1, lcn; J. S. Jackson 1, lcn. Humble O&R Co.'s Kokernot 1, elev 3595 ft, top salt 2713 ft, fsh 3780 ft; Mrs. C. L. Thompson 1-B, set 12½ cas 1283 ft. Independent O&G Co. (Phillips Pet. Co.) et al's McDonald 4, elev 2489 ft, dr 2170 ft. Magnolia Pet. Co.'s Byrne 1, dr 945 ft. Messenger et al's Butz 1, sd 740 ft; Byrne 2, sd 1367 ft. J. R. Miller et al's Bennett 1, sd 1700 ft. J. D. O'Mara et al's Bennett 1, sd 1230 ft. Oregon Oil Corp. et al's Yates 2, elev 2565 ft, top salt 710 ft, sd hfw 2440 ft. O. J. Perren et al's Eaton 2, sd showing oil 1566-68 ft. Pure Oil Co.'s Harrison 1, elev 3495 ft, dr anhydrite 1912 ft. Rio Grande Oil Co.'s Webb 1, dr 605 ft. W. D. Riser & White's Riser 1, sd 360 ft. Sides & Cloyd's Blackstone-Slaughter 1, sd 2330 ft. N. E. Tanner & Carl Cromwell's University 1, pb from hfw 2150 ft for shot. Williams & Moran's R. G. Heiner 1, lcn.

PRESIDIO COUNTY—Brite Prod. Co.'s L. C. Brite 4, elev 4536 ft, sd 2630 ft.

REAGAN COUNTY — Big Lake Oil Co.'s University 4-C, pulling and working on drill pipe, td 8220 ft; University 5-C, cem 13⅜ cas 3030 ft; University 179, cem cave 4003 ft. Group One Oil Corp. (Texon's) University 4-B, dr 960 ft.

REEVES COUNTY—Biggs & Smith's Chergiee et al 1, sp and sd. The California Co.'s Kloh 1, elev 2798 ft, cem back from 3616 to 3577 ft. May & Milton's J. B. Ellis 1, sd 1410 ft. Salsbury & Gregory's Bell 1, sd 370 ft. Lee O. White et al's Mrs. Lizzie Hershensen 1, elev 3244 ft, top salt 2670 ft, sd 4415 ft.

RUNNELS COUNTY — Boyce & Lamar's Lange 1, elev 1844 ft, sd 2643 ft. Chas. Dutton et al's G. W. Dean 1, sd 1330 ft.

SCHLEICHER COUNTY—Delmar Oil Co.'s O'Harrow 1, elev 2421 ft, dr 5050 ft. Phillips Pet. Co. et al's J. A. Whitten 1, elev 2333 ft, pb from 6880 ft to shoot again at 4915-24 ft. Munger-Wilson Oil Co.'s Page 1, elev 2270 ft, fsh 4912 ft. Paul Teas & Walter Gant's Allison 1, dr 3555 ft. J. D. Wesner et al's R. E. Ratliff 1, sd 750 ft.

SCURRY COUNTY—J. G. Armand & Camp Springs O&R Co.'s Strayhorn 1, ur 750 ft; Quinn 1-A, elev 2316 ft, plugging 4373 ft. D. H. Byrd & H. A. Harmon's Murphy 1, elev 2298 ft, top salt 775 ft, top lime 1507 ft, co after 2nd shot of 180 qts at 2300-50 ft, td 3501 ft. R. B. Pender O&G Co.'s Davis 1, elev 2208 ft, top salt 445 ft, co 4970 ft. Mid-Kansas O&G

Co. & Vacuum Oil Co.'s Peckham 1, elev 2155 ft, dr 3930 ft.

STERLING COUNTY—W. C. Beesley et al's W. L. Foster 1, sp and sd.

TAYLOR COUNTY—W. G. Clark & Humble O&R Co.'s Kendall 1, sd 2305 ft. Eastland Oil Co. et al's Hunter 1, ur cas after swab 190 bbls oil at 2380-89 ft. Gibson-Johnson et al's Bingham 1, sd 2460 ft. H. B. Herring-Hucony Gas Co. et al's Richie 1, dr 2235 ft. J. B. Jameson et al's Webb 1, elev 1905 ft, dr 6165 ft. Sanger et al's Abilene fee 1, rig. Sanger O&R Co.'s Osborn 1, rig.

TERRELL COUNTY—Big Bend Oil Corp. et al's Bassett 1, sd 2130 ft. Mid-Kansas O&G Co.'s Good 1, elev 2405 ft, fsh 5229 ft.

VALD VERDE COUNTY—O. O. Owens et al's H. Y. J. Mills 1, elev 2130 ft, sd 6760 ft. Phantom Oil Co.'s Ingram 1, sd 3035 ft.

UPTON COUNTY—Gulf Prod. Co.'s King 1, rig. Penn Oil Co. & Shell Pet. Corp.'s T. M. Anderson 1, rig.

WARD COUNTY—Atlantic Oil Prod. Co.'s Miller-Reynolds 1, top salt 935 ft, dr 2230 ft. Atlantic & The California Co.'s E. W. Thomas 1, top salt 2244 ft, showing oil and gas, took 25th core at 2488-92 ft. Atlantic & Penn Oil Co.'s Bennett 1-B, elev 2578 ft, top salt 2075 ft, flowing oil by heads and running tapered tubing at 2550-2607 ft. Bradford et al's M. B. Murry 1, top salt 790 ft, sd with 1200 ft oil in hole 2130-95 ft. Gulf Prod. Co.'s Hutchings 4, elev 2639 ft, making 25 bbls oil and 11,950,000 ft gas 2565-2765 ft; Hutchings 5, elev 2679 ft, top salt 1205 ft, flowed 110 bbls oil and one million ft gas 2555-85 ft; O'Brien 13, dr 2050 ft; O'Brien 14, top salt 932 ft, dr 2150 ft. Magnolia Pet. Co.'s Sealy 1, dr 1290 ft. R. F. Owen et al's Johnson 1, sd 1205 ft. Sid Richardson et al's O'Brien 4, elev 2655 ft, top salt 1136 ft, dr 2560 ft. Shipley Oil Corp.'s Monroe 1-A, elev 2655 ft, top salt 2485 ft, sd 2520 ft. Texas Pacific Coal & Oil Co.'s M. Barker 1, dr 310 ft.

WINKLER COUNTY — Atlantic Oil Prod. Co. & Simms Oil Co.'s Geo. Sealy 1, elev 2728 ft, top salt 1690 ft, show oil 3140 ft, dr 3165 ft. Champion-Winkler Oil Corp. (W. H. Wilson's) Campbell 1, sd 4639 ft. Jefferey et al's Brown 2, sd 3120 ft. Empire Gas & Fuel Co.'s Daugherty 1, rig. Magnolia Pet. Co.'s Scarborough 3, dr 115 ft. L. C. Turman et al's Daugherty 1, rig.

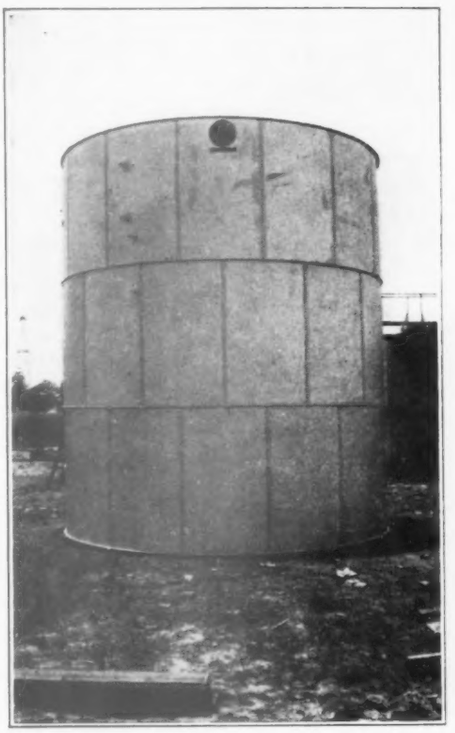
Planning Historical Oil Display at World's Fair

Reproduction of the celebrated Drake well at Titusville, Pennsylvania, the first oil well driven in America, has been proposed as one of the important science exhibits at the 1933 Chicago World's Fair. The proposal is contained in a report of the mining and metallurgy division of the National Research Council's science advisory committee composed of leading engineers who are collaborating on plans for an extensive series of exhibits to show a hundred years of progress in mining and metallurgy at the 1933 exposition.

The old Titusville well driven by E. S. Drake for Seneca Oil Company in 1859 which reached a depth of 69 feet would be exhibited in contrast to a modern producing well 8000 or more feet deep, according to the proposed plan.

Actual drilling would be in operation as part of the exhibit which would also show field storage tanks and tank farms with pipe line connections and pump stations to refinery. Progress in methods of shipping crude petroleum would be shown by exhibits of wooden barrels, barges, tank cars, tankers and pipe lines, showing how pipe lines pass over or through hills, lakes and rivers.

All the steps in early and modern re-



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fining would be shown including recovery of gasoline from natural gas. The early refinery, the report notes, should illustrate the "cheesebox" stills which were of a capacity of about 50 barrels, and were installed by refineries shortly after the bringing in of the Drake well.

There are some cheesebox stills in commercial operation in the Pennsylvania field at the present time, according to the report. They are in old refineries, it states, and have a capacity of about 100 or 200 barrels a day.

"Examples of treating or washing apparatus to refine the kerosene and lubricating oil for market as of about 1860 should be built to accompany the stills," the report continues. "The distillation products of this period were simple. The gasoline from the crude oil was condensed and run into rivers or burned, as there was but slight use for it. Practically only kerosene and lubricating oil fractions had commercial use.

"The modern refinery is to be operating so that the observer can seen the actual process of distillation taking place with resultant products. Distillation can be brought about by the modern pipe still which flashes the oil into a vapor which is fractionally separated in a bubble tower into gasoline, kerosene, gas oil, wax distillate and fuel oil residue, all these fractions being taken from different portions of the bubble tower and condensed, passing into storage. The bubble tower can be made of glass sections so that one can actually see what takes place during fractionation of petroleum and watch the streams passing out of the end of condenser coils."

National Research Council's science advisory committee is under the chairmanship of Dr. Frank B. Jewett, vice-president of the American Telephone and Telegraph Company. The mining and metallurgy division of the committee is headed by Dr. M. M. Leighton, chief Illinois State Geological Survey at Urbana.

Bert Williams, formerly sales manager for Gilmore Oil Company in the Washington-Oregon territory, has been transferred to the home office at Los Angeles, where he will become manager of lubricating sales.

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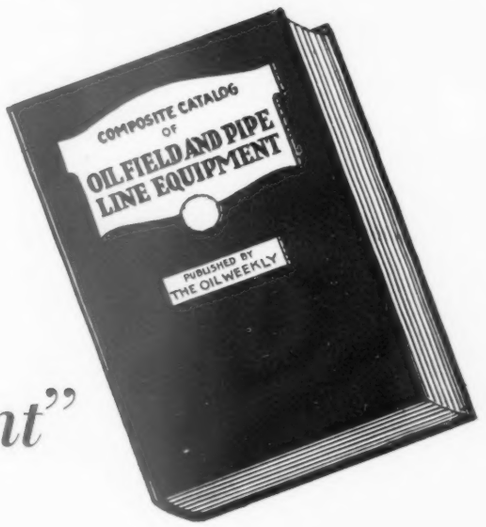

The problem of tubing anchors was up for discussion in the district superintendent's office in a Central Texas oil field. The field superintendent had used a certain kind of tubing anchor in another field and it was satisfactory—but he couldn't remember who made it.

"It's just what we want, and I'd like to send in the requisition to the Dallas office made out just right so that we get exactly what we want," he told the district superintendent.

"Well, let's look it up in the Composite Catalog," responded the district superintendent, reaching for his copy.

And there it was, complete description, illustration, address of company, name of supply company handling it, 'n everything.

So the requisition went through, the tubing anchors were received, and everybody was happy.

Use your Composite Catalog every time you want to make sure about the facts.

You, too, will find in the Composite Catalog, the answer to your inquiry for MORE information on that equipment you are considering.

GULF PUBLISHING COMPANY

(Composite Catalog Division)

3301 Buffalo Drive **Houston, Texas**

A. S. M. E. Program for Tulsa Meeting in October, Arranged

TULSA.—Two days of the program of the fall meeting of Petroleum Section of the American Society of Mechanical Engineers, October 6 and 7, will be devoted to subjects within the pipe line and production divisions of the petroleum industry. A third day will be devoted to refining subjects.

This meeting of the A. S. M. E. will be held in connection with the International Petroleum Exposition and Congress, October 4 to 11. In other years the A. S. M. E. program has been held during the exposition but this year the meeting place will be within the exposition grounds. The auditorium has been reserved for the three days.

Charles Piez, president of the American Society of Mechanical Engineers, will be in Tulsa for the meeting and will be heard the morning of the first day of the program.

Both morning and afternoon, October 6, will be devoted to pipe line mechanical subjects. The morning of October 7 will be devoted to pipe line subjects. The afternoon of October 7 will be devoted to oil field production problems.

The program for these two days follows:

Monday, October 6

9:30 a. m., opening session:

Greetings from President Charles Piez.

"Purpose and Scope of Petroleum Division," by William G. Heltzel, Sinclair Pipe Line Company, Tulsa.

"Service Tests on Carbon Formation in Diesel Engines," by E. H. Hillman, lubrication department, technical division, Standard Oil Company of Indiana.

"Lubrication of Diesel Engine Cylinders and Cylinder Liner Wear in Petroleum Industry," by J. M. McGregor and J. B. Harshman, Sinclair Pipe Line Company, Tulsa.

"Some Operating Data for Electrical Motor Driven Reciprocating and Centrifugal Oil-Pipeline Pumps," by W. H. Stueve, Oklahoma Gas and Electric Company, Muskogee, Oklahoma.

1:30 P. M.—Afternoon Session

"The Economic Design of Oil Pipeline Transportation Systems," by Oscar Wolf, assistant chief engineer, The Texas Pipe Line Company, Houston.

"Reports by committee on economic analysis of pipeline pumping station costs," by F. E. Waterfield, Oklahoma Pipe Line Company, Muskogee, Oklahoma.

Tuesday, October 7

9:30 a. m., morning session:

"Automatic Control in Pipeline Pumping Stations," by J. B. Ford, Chapman Valve Company, McMahon, Tulsa, Oklahoma, and T. D. Williamson, Petroleum Electric Company, Tulsa.

"Observations on Temperatures of Mid-Continent Oil Pipelines Through a Period of a Year," by Bert Martin and William G. Heltzel, Sinclair Pipe Line Company, Tulsa.

Inspection of Automatic Pipeline Pumping stations.

Tuesday, October 7

1:30 p. m., afternoon session:

"Embrittlement of Drilling Lines by Hydrogen Sulfide," by Blaine B. Westcott, engineer of tests, and L. W. Vollmer, Gulf Research Laboratory, Pittsburgh.

"Superheated Steam Experiments," by Weaver Smith, Superheater Company, New York.

Report of committee on rotary drilling equipment.

Reports of committee on unfired pressure vessels for petroleum industry.

"Gasoline Driven Rotary Equipment for Oil Field Service—Its Design and Operation," by H. W. Page, Page Oil Field Equipment, Oklahoma City.

"Open Flow Measurement of Natural Gas Wells," by Walter Reid, Dallas.

Bring in 200-Barrel Well 2½ Miles Northeast of Rincon Field

Ventura, Calif.—Chanslor-Canfield Midway Oil Company has succeeded in obtaining a production of about 200 barrels from Hobson A-2, located 2½ miles northeast of the Rincon field, but there is some doubt concerning the commercial possibilities of such a completion at a depth of 7480 feet. A 5¾-inch oil string was run to bottom and the well is producing on the compressor. The oil is about 24 gravity and shows a cut of 20 per cent.

If a commercial producer, Hobson A-2 ushers in a new oil field for California, lying roughly in line with the Rincon and Ventura Avenue fields. A small production at such a great depth prevents the discovery from being received with the usual excitement. Chanslor-Canfield Midway Oil Company has been trying for several years to develop production in this part of Ventura County and it was largely through its efforts that Petroleum Securities Company discovered the Rincon field late in 1927.

The new well is located on a separate structure and the faulted conditions of the very rugged district makes the geology a complex problem. Drilling of the well has been very expensive and the small production will not cause additional drilling. The fact that the well is flowing with the aid of a compressor is enough to discourage intensive development. Leases near the well are held by large companies and the tracts are large. The discovery increases interest in the district lying between Ventura Avenue and Rincon fields and shows the possibility of shallower production at some interval—possibly higher on the structure.

Well Abandoned in 1926 Blows in as Gasser

Shreveport—An old hole on the outskirts of Shreveport, located in Section 15-17-14, Caddo Parish, abandoned at 2300 feet in 1926 after being drilled by Manie Drilling Company as O'Conner 1, blew in while being bailed at a depth of 1988 feet Saturday, September 6, making an estimated gas yield of 20,000,000 cubic feet, along with considerable salt water and mud.

The work-over test was bailed in with a tractor. The well is now owned by W. E. Cunningham on a 15-acre tract near the south limits of the city. It is near two wells that made some gas several years ago on the Louisiana State Fair grounds and later went to salt water and were abandoned. The gas is coming from the Blossom, it is believed.

Ohio Oil to Complete San Juan Deep Test

Durango, Colo.—The deep test in the northern end of the San Juan basin, drilled to 6747 feet by Transcontinental Oil Company, has recently been taken over by Ohio Oil Company, which will drill the test to its completion in the Pennsylvania series which Continental Oil Company found productive at 6771 feet in its well on Rattlesnake dome, southern end of the basin. The well is Glade 1, in Dolores County, Southwestern Colorado.

CONTRACTS TAKEN FOR

TORSION BALANCE

and

MAGNETOMETER SURVEYS

With the Collaboration of

DONALD C. BARTON

Consulting Geologist and Geophysicist

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CAMEL'S HAIR, COTTON and LINEN PRODUCTS

Stocks Carried at

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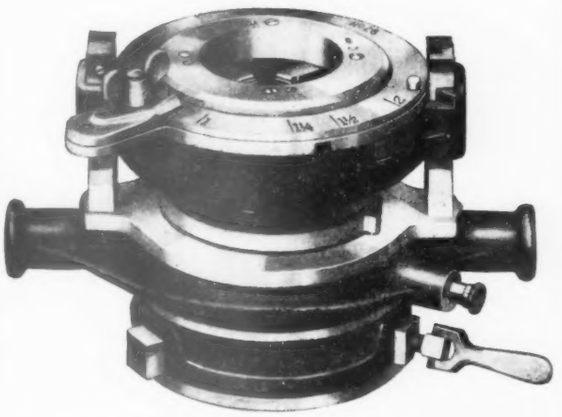
Phone 2-1117

No. 26 Beaver Ratchet 1″-2″

A "HEAVY DUTY" Die Stock



An Extra-Heavy Tool For Extra-Hard Usage

If you were to make a check throughout the oil fields of the world—in California, in the Mid-Continent, Wyoming, Venezuela or Russia—you would find the No. 26 (1″ to 2″) Beaver Die Stock is used almost exclusively.

There are a number of sound reasons for this!

FIRST—The tool is fully self-contained — there are no loose bushings or extra dies to bother with. It is a "one-piece" tool.

SECOND—It is heavy, strong and rugged—and will stand a tremendous amount of abuse.

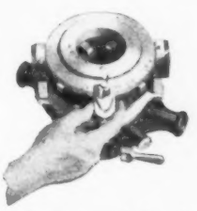
Several years ago the Nos. 25 (plain) and 26 (ratchet) were discontinued—in favor of the new Nos. 11 and 11-A, which are lightweight, self-contained tools.

However, so insistent has been the demand, not only from the oil and gas companies the world over, but from hundreds of plumbers and steamfitters, that we have been forced to again make these tools available.

Write for Bulletin C-2.

Self-contained
Adjustable
Durable
Strong

The Universal Chuck centers the pipe accurately—no loose bushings.



Set it to size—that's all. One set of dies threads all sizes.

Other Types of 1 to 2″ Beavers

If you prefer the "self-contained" feature but your work does not quire heavy-duty tools, the light-weight self-contained 1 to 2 Beavers (Nos. 11 and 11-A) will appeal to you. Ask for Bulletin C.

If you prefer the four-post "separate-die" type of 1 to 2 inch die stock then Nos. 8 and 8R Beavers (with nine distinct advantages) will more than appeal to you. Ask for Bulletin C-1.

THE BORDEN CO., 520 Dana Ave., Warren, O.

Die Stocks
Groovers

BEAVER

Pipe Cutters
Power Units

Sold in Field Stores by

Eastern Oil Fields:
NEW MARTINSVILLE SUPPLY CO., New Martinsville, W. Va.
LLOYD SMITH CO., Bradford, Pa.
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PELICAN WELL TOOL & SUPPLY CO., Shreveport, La.

Rocky Mountain Oil Fields:
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California Oil Fields:
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W. B. CORNISH, 3924 Baker Ave., Bell, Calif.
ALCO OIL TOOL COMPANY, Compton, Calif

Cross your fingers like this

Note the pressure on your forefinger. This illustrates internal stress in ordinary wire rope, in which the strands and wires are held in their helical form by force.

Now do this -- *which explains why Tru-Lay spools perfectly*

Note how lightly and relaxed your fingers lie against each other. This illustrates how the strands and wires in Tru-Lay *Preformed* Wire Rope are free from torsional stresses—and why Tru-Lay because of its greater flexibility—adjusts itself on the drum and spools perfectly.

Let us give you more facts about Tru-Lay. Address:

Are you going to the Exposition? You are invited to call at our booths Nos. 97 and 98 in the Texas Building

AMERICAN CABLE COMPANY, *Incorporated*
New York Central Building, 230 Park Avenue, New York, N. Y.
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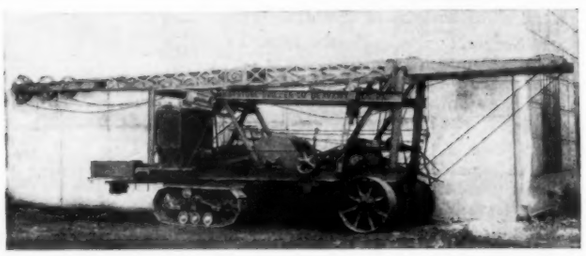
Canada Wire & Cable Company, *Limited*, Toronto
Anglo-Canadian Wire Rope Co., *Limited*, Montreal

American Cable Company

Tru-Lay *Preformed* **WIRE LINES** **Crescent** *Standard*

The Keystone Driller Co. Announces

TRADE MARK KEYSTONE REGISTERED U. S. PATENT OFFICE



No. 9 All Steel Wire Line Spudder

The new and improved feature offered in this latest Keystone Spudder represents greater advancement in portable well drill design than has been realized in the previous ten year period. Some of the outstanding features are:—

1—ALL STEEL CONSTRUCTION.
2—DUAL CUSHION SHOCK ABSORBERS FOR WIRE LINE DRILLING.
3—CHAIN DRIVE THROUGHOUT.
4—ALL STEEL, SELF RAISING DERRICK.
5—STEEL APRON WHEEL, HALF CRAWLER MOUNTING.
6—POWER UNIT—A SIX CYLINDER WAUKESHA OIL-FIELD ENGINE DEVELOPING 70 H.P. AMPLE FOR DRILLING, TRACTION AND PULLING TOOLS.
7—RAPID TRACTION ANYWHERE THAT A TRACTOR WILL GO.
8—SPUDDING DEPTH CAPACITY 3000 FEET.

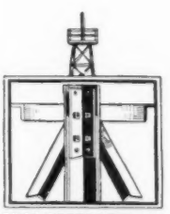
Write or wire nearest office for literature and prices.

KEYSTONE DRILLER COMPANY
BEAVER FALLS, PENNA.

Offices and Warehouses:
ARLINGTON, N. J. BIRMINGHAM, ALA.
WAUKEGAN, ILLINOIS JOPLIN, MISSOURI

WASHINGTON STRUCTURAL STEEL DERRICKS

1-5th the up-keep
MANY TIMES THE LIFE



WASHINGTON DERRICKS

The estimated average up-keep on a Washington Structural Steel Derrick does not exceed $25.00 per well per year. This consists of painting and replacing a few ordinary machine bolts. For the first few wells, the salvage value is just about 100%. After many years of service, the salvage value will be affected but deterioration is generally very slow.

Two dozen deep wells with a single Washington is not unusual service for these rigs. They are as permanent as it is possible to make them.

Rugged, fireproof, windproof, easily erected and dismantled. Their first cost is somewhat higher than for wooden structures, but they pay a much higher return on the investment.

Scientific design and patented double-spliced, super-strong joints give these derricks super-rigidity.

Write for newest catalog!

O'BRIEN STEEL CONSTRUCTION CO., INC.
WASHINGTON, PA.

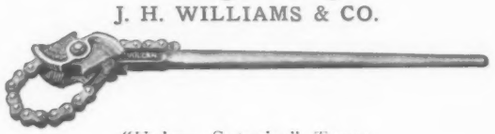
Western Representative:
Rig Equipment Company, 1524 So. St. Louis Street,
Tulsa, Oklahoma

New Equipment for the Field

Machinery - Tools - Catalogs - Books

"Vulcan Superior" Pipe and Fittings Tongs

J. H. WILLIAMS & CO.



"Vulcan Superior" Tongs

J. H. Williams & Co., Buffalo, New York, has introduced the "Vulcan Superior" chain tongs for universal service on both pipe and fittings, a tool which is designed to serve the two jobs alike with no change whatever in the tool itself.

The "V" recess, noticeable in the accompanying illustration, gives quick and positive grip on fittings. Loss of time in altering the tool to fit particular jobs is eliminated through the design of this tong.

The "Vulcan Superior" tong is built with reversible jaws for double life. When the teeth first in use begin to show wear, the jaws are simply turned end-for-end, making practically a new tool.

The chains, either flat or cable type, may be easily and positively locked. Each flat chain is proof-tested for safety to the operator. All parts are interchangeable. Seven sizes for ⅛ to 12-inch pipe and fittings.

J. H. Williams & Co., will furnish complete details upon request.

Pipe Machine

BIGNOLL & KEELER MACHINE WORKS

Bignall & Keeler Machine Works, Edwardsville, Illinois, announces the No. 8 duplex machine which is designed to cut and thread pipe and casing from 2½ to 8¼ inches, respectively. It is equipped with Peerless sliding die-head, with expanding dies.

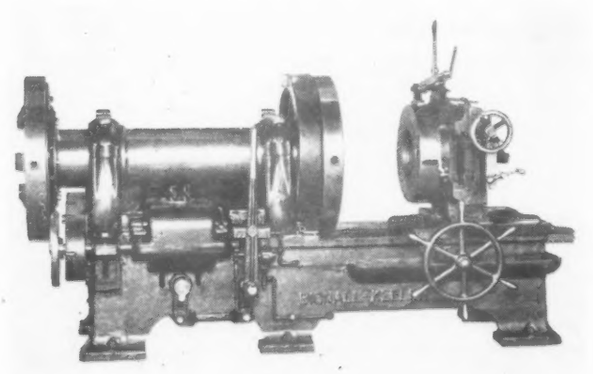
Eight speed changes are provided through broad face steel cut gears, running in oil, in a compact gear-box. A two-way positive clutch is mounted on the bed shaft. This clutch has both fast and slow positions, and provides a quick stop and start for the machine, and also enables the operator to shift quickly to the higher speeds for cutting off operation on large pipe sizes. Power is transmitted to the revolving parts from below, the strongest possible arrangement.

A three-jaw Independent chuck is mounted on each end of the arbor, each jaw having a tempered tool steel gripper which can be readily removed for sharpening. The machine is furnished with a geared oil pump, which provides a constant stream of oil for the dies and cutting-off tool.

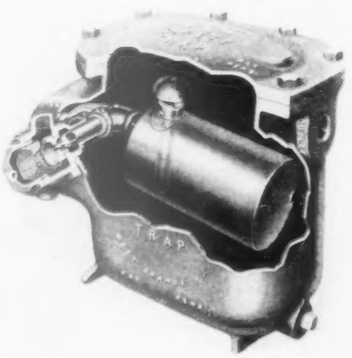
Self centering "V" jaws with hardened faces are provided for steadying pipe when cutting off, reaming and beveling.

The die-head slides to one side for changing dies and when putting collars through to the cut-off tool. The head can be arranged for extra wide dies either 3-7/16 inch or 4-7/16 inch wide. Landis die-heads and dies can be substituted for Peerless head and dies if desired. Two Landis heads are required for full capacity of machine.

The machine can be equipped with motor for any available current, or arranged for belt drive. It occupies floor space 57 inches by 110 inches, has 10 inch diameter hole through spindle, 20 inch carriage travel, weighs about 7500 pounds, and is operated by five-horsepower motor.



Bignoll & Keeler Pipe Machine



K & M Steam Trap

Steam Trap

K. & M. STEAM ENGINEERING COMPANY

K. & M. Steam Engineering Company, 94 Franklin Avenue, West Orange, New Jersey, has a new design in a steam trap.

There are only three moving parts to this trap, all rolling, and subjected only to temperature of condensate. The design is to eliminate heat loss due to "steam blowing." The valve is on the inlet, allowing free passage of condensate by closing when steam enters the float.

The size of the vent hole may be adjusted for various conditions or to control effect of "regeneration." The valve is wide open for slugs of water, and is closed instantly by steam. The valve is protected from sediment by a strainer in the inlet.

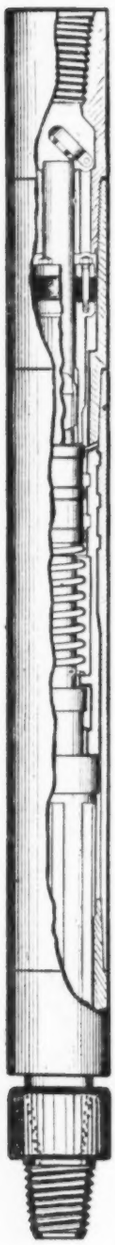
This trap also offers its use as a safety trap, a trap suitable for any pressure, a trap suitable for any discharge condition, a trap for temperature control work or an ideal trap for draining air lines.

Full particulars on construction and operation are available upon request.

NEW EQUIPMENT FOR THE FIELD

Pump Trip Hydraulic Jar

SHAFFER TOOL WORKS



Shaffer Tool Works, Brea, California, is now manufacturing and marketing the new Shaffer pump trip hydraulic jar, the latest addition to its line of fishing tools. The jar is featured by its simplicity of operation and speed in action.

The driller lowers the drill pipe to set, pulls up until he has the desired strain. The pump is started, tripping the jar at less than 400 pounds pressure. The operator then sets the jar by lowering the drill pipe, and proceeds as before. Thus, with one man at the draw works and another at the pump, the jar is operated as fast as the drill pipe can be raised and lowered, using only the engine and brake, and without throwing out the clutch or having to use the table to set or trip the jar. Circulation is maintained at all times except when the jar is set for tripping.

Under field test this jar has been brought out of the hole without any damage showing after 75 hours of jarring.

Full details on this new product are available by writing the manufacturers.

The American Petroleum Institute, in an effort to place "Function of Natural Gas in the Production of Oil," in the hands of every oil company executive, engineer, geologist, production superintendent and others directly interested in drilling and production, is making an additional distribution of 2000 copies.

Some 5000 copies already have been distributed to members of the Institute and placed on the shelves of virtually every university, college and technical school in the country. It is now desired to put the remaining copies in circulation where they will be most useful, and they are being offered at a special closing price of $1 each.

The book, written by H. C. Miller, senior petroleum engineer of the U. S. Bureau of Mines, presents the findings of two years of study by technical subcommittees of the Institute's gas conservation committee in non-technical language. In its 253 pages are compiled the experience and opinion of scientists and engineers regarding the importance of natural gas in petroleum production and the best means for its utilization. There are also 36 charts and graphs and 24 tables of summarized data.

Open house was held by the American Tank and Equipment Corporation recently affording oil men an opportunity to go through its new manufacturing plant at Oklahoma City. Oil men as well as officials of the company and of Black, Sivalls and Bryson, Inc., of which American Tank is a subsidiary, were in attendance from Oklahoma City, Tulsa, Bartlesville, Kansas City and other points.

Ramhead Slush Pump Piston

ALAMO IRON WORKS

Alamo Iron Works, San Antonio, Texas, has recently announced the new Ramhead piston for slush pumps, a piston which engineers have designed and built to allow less friction and less slippage, to provide greater working efficiency and longer life.

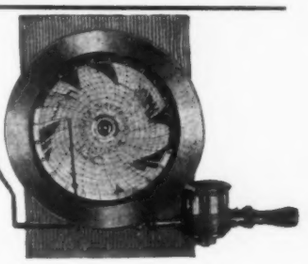
The new Ramhead piston offers to operators a number of new features which have been worked out over a long period of experimentation and which have been tested both in the shops and field. It is a patented product, and a sectional illustration here shows the heavy metal sections and how the rubber is moulded around the insert ring.

The Ramhead piston requires no special tools for installation. The rubber ring may be replaced without the removal of the piston body. The design is such that the metal parts fully support the rubber rings under all pressures, and the friction of the special rubber ring on liner is not in excess of pressure requirement. There is no metal contact with the liners. Renewal of rubber rings, with the semi-steel metal parts in this piston, put the piston in its original condition.

Alamo Iron Works, San Antonio, Texas, has recently issued a four-page folder in two colors, describing and picturing a new Ramhead piston for slush pumps. This piston is available in 13 sizes, and these sizes, with weights, are listed, with prices, in tabular form in the bulletin. Alamo Iron Works will gladly furnish a copy of this new bulletin to interested persons upon request. The new Ramhead piston, which is patented, is made to fit practically all kinds and sizes of slush pumps.

Brewster Company, Shreveport, Louisiana, has recently opened shops at Oklahoma City, Hobbs, New Mexico, and Houston for the purpose of servicing and hard facing Brewster bits and core heads, which are leased for periods of service rather than sold outright to the operator.

MARTIN - DECKER AUTOMATIC RECORDING WEIGHT INDICATOR



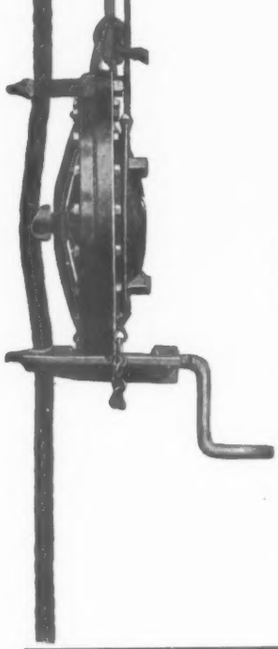
TURNER VALLEY FIELD
(Calgary, Canada)

July 10th 1930 **100%** Every Rig Running

Was Equipped With
Martin-Decker Weight Indicators

Mr. W. R. "Frosty" Martin on a recent trip to Canada made a survey of the activity in Turner Valley. He found that on July 10th every rotary rig running in this field was equipped with the Martin-Decker Automatic Recording Weight Indicator.

Throughout the world wherever rotary drilling is being done you will find the indispensible Martin-Decker Weight Indicator.



MARTIN-DECKER CORPORATION

Formerly

Martin-Loomis Corporation
3431 Cherry Ave.,
LONG BEACH
CALIFORNIA

Mid-Continent Distributors
Reed Roller Bit Company
Houston, Texas

Foreign Distributors
Oil Well Supply Company
Pittsburgh, Pa.

WEIGHT RECORDING MEASUREMENT AND CONTROL

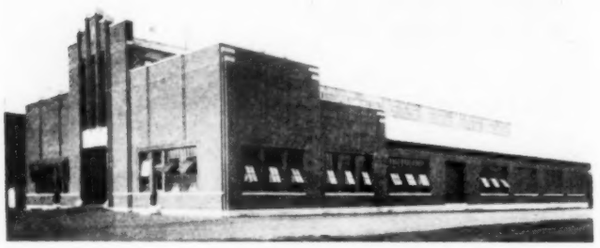
Manufacturers and Supply Dealers Notes

FRANK R. SEAVER

Initial unit of a branch factory of the Doheny Stone Drill Company of Los Angeles has been opened at Houston, Frank R. Seaver, Doheny executive, has announced. The branch is located in a large warehouse which has been remodeled and which when completely equipped and in operation will be the largest of the Doheny branches. Invasion of the Mid-Continent area by the Los Angeles firm was brought about by the increasing demand for Doheny Stone Drill Company products throughout Texas, Oklahoma and Louisiana oil fields. Branches have been in operation for some time in Oklahoma City and Hobbs, New Mexico. The parent factory occupies 40 acres at Torrance and is sending a large and complete exhibit for the International Petroleum Exhibition to be held at Tulsa, Oklahoma, in October. Principal product of this organization is the well-known Hydril oil well drilling equipment.

Paul Reid, manufacturers representative, 915 Merchants & Manufacturers Building, Houston, has returned from a trip through Southwest Texas fields, visiting particularly the Refugio and Pettus fields.

American Rolling Mill Company, Middletown, Ohio, has published a bulletin titled "Better Welds with Armco Ingot Iron." The quality of this product as a welding material is told, and illustrations of actual jobs are given. The bulletin covers 40 pages in which the story of Armco ingot iron is told; and the 35 years of service of the company depicted. All of the information necessary on the material, uses in welding and methods are covered in description and charts in this bulletin, which may be had for the asking.



Wheatley Brothers Brass and Metal Works has completed this new plant on the Sand Springs road near Tulsa, a plant that is modernly equipped for making oil field and pipe line equipment. Tom Wheatley is in charge of the Tulsa plant. Another plant is maintained in Kansas City under the supervision of Frank Wheatley. Still another branch is operated at Los Angeles.

American District Steam Company, North Tonawanda, New York, has issued a 40-page catalog covering Adsco products for steam distribution, including steam line equipment, expansion joints, casing, conduit, condensation and steam flow meters and other specialties for the economical distribution of steam. This is Catalog No. 30 of a series put out by this company on its line of equipment. It is replete with illustrations, charts and prices, and will be mailed upon request.

Darling Valve & Manufacturing Company announces the opening of a Pacific Coast office and warehouse at 2450-56 Hunter Street, Los Angeles, on August 25, in charge of Harry L. Carr, Pacific Coast manager.

Vickers Machine Works, Smackover, Arkansas, has purchased the Pate Machine Works, 1800 East G street, Oklahoma City. The plant is being enlarged and new show equipment installed for the manufacturing and repairing of oil field equipment. In addition to new work done in this shop the company will manufacture and distribute from this point the Vickers releasing and circulating overshot.

All visitors to the International Petroleum Exposition and Congress, October 4 to 11, will be registered. The plan of registration is being worked out by William B. Way, the general manager, in response to requests from exhibitors. The method adopted will result in each visitor being provided with a lapel button, which will designate his connection in the petroleum industry and will also result in each exhibitor being given a list of visitors each day.

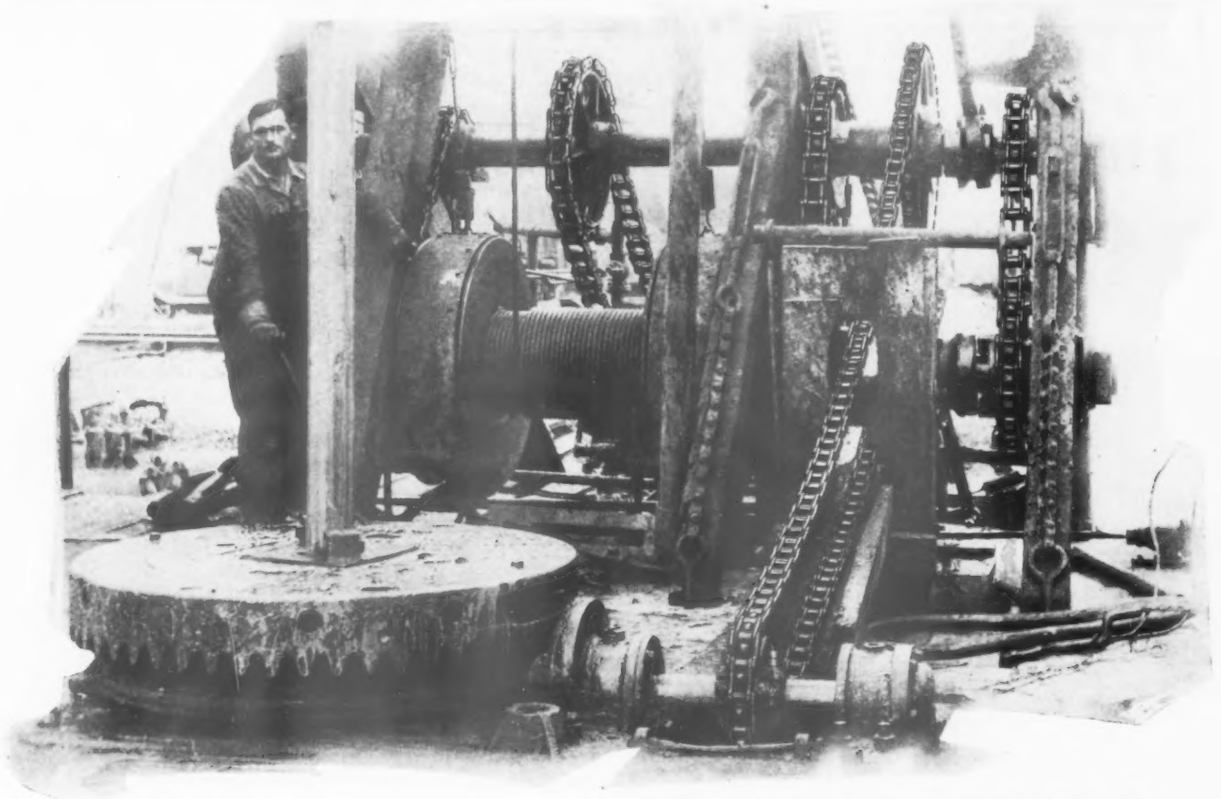
There will be 24 registration stations within the grounds and buildings. This plan has been selected rather than having it done at entrances because the rush at the gates would make the work difficult. Instead as visitors pass through the buildings, they will pass one registration point after another. At each, persons not wearing lapel buttons will be asked to register. In this way it is expected that the greater part of each day's attendance will be registered.

One color of button will designate a person as being in the producing division of the petroleum industry. There will be a color for refining, one for transportation, one for marketing, one for exhibitors and one for those not connected with the petroleum industry.

Each night the names collected during the day will be taken to a staff of workers, who will compile the names in alphabetical form and cull those not connected with the industry. Then stencils will be cut and the whole list published by memeograph. It will be available the next morning.

Only one list will go to a holder of a contract for space within the exposition grounds. Each exhibitor will be required to go to some designated point to get his list. It will be released upon signature and no duplicates will be available.

Two objects are being sought through the registration. By asking each visitor to wear a lapel button exhibitors will know what division of the industry each individual is connected with. This is calculated to save much time for those attached to exhibits. The other object is to provide an extensive mailing and working list. The list to be published each morning will give the temporary Tulsa address of the individual, as well as his permanent address. The temporary address will allow manufacturers to get in touch with individuals, while the permanent address will permit the compilation of mailing lists.



TAME ONES

or

WILD ONES!

. . . BALDWIN "chains" 'em all down

They call it digging—but, considering the part it plays, they might as well call it "chaining 'em down." As every "digger" knows, good chain is what gets the power to the bit, pulls the pipe, makes the catline jump, in fact, what gets the job done. Every time he cracks the throttle, chain whips into action and puts power where it's wanted.

Vital as it is, the best chain is none too good for your rigs. Therefore, consider BALDWIN CHAIN. Its straight-link construction eliminates stretch, and guards against chain riding the sprockets. This construction also prevents snake-like weaving, or sideplay—which makes BALDWIN CHAINS outwear others by long margins. Furthermore, it permits much greater accuracy in manufacture than is possible with offset type of chain.

These sound reasons, together with the long list of successful producers who have standardized on BALDWIN CHAINS, argue that, on your next changeover, you call WORD and order a set of BALDWIN CHAINS—1030S and 1040S. From then on, you'll KNOW what chain quality and long life can be!

"The best known WORD in the oil business"

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Lake Charles HOUSTON Seguin

Shreveport

P. O. Box 276

Phones: DAY: Preston 1927
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Hadley 1973

SQUEAKS FROM THE BULL WHEEL

"If Blatz and Pulhuh are nominated, which will you vote for?"

"Blatz."

"But I thought you knew Pulhuh?"

"I do."

The short story seems to be very popular these days.

Yeah. Nearly every man I meet stops to tell me how short he is.

Ah tells yo' jedge, Ah's innocent ob hitting dat woman wid ah flat-iron. She done hit husse'f.

Hold on now! Common sense tells us that a woman wouldn't hit herself with a flat-iron.

Ah knows, jedge. She didn't mean to hit husse'f. She done throwed de iron at me, but she fo'got it was an electric iron an' de co'd swung it back.

You have a fine cook, yet you are always growling about her to your friends.

Do you suppose I want her lured away?

Pa, what is a philosopher?

A man with a good liver, heart, stomach and bank account.

The boarders had just seated themselves at the table when a cockroach stalked across the table. The boarding-house keeper was nonchalant. "You know, folks," she said, "I never see one of those little creatures without wondering where it came from."

"And I never see one," said Miss Pert, "without wondering where it is going."

Why don't you and Bilkins go into partnership?

He was engaged to my wife before I was. You don't suppose I would take a smarter man than I am for a partner, do you?

Mrs.—I am getting stouter all the time.

Mr.—Yes, when I got married I little realized that I was getting a wife on the installment plan.

"We all want you to come to our party, tonight, Mandy."

"Can't Sambo, I'se got a case of diabetes."

"Come along anyways, Mandy, and bring it wid you. Those niggers will drink most anything."

The June bug comes the last of June,
The lightning bug in May;
The bed bug takes his bonnet off
And says: "I'm here to stay."

Grandma: "Doesn't that little boy swear terribly?"

Grandson: "Yes'm, he sure does. He don't put no expression in it at all."

"Oh, I do wish these recipes would be more definite," complained the June bride. "Here's on telling how to use up old bread, but it doesn't tell how old the bread must be."

"Now that you've finished college, my boy, don't you think it would be a good idea for you to go out and hunt a job?"

"I should say not, Dad—let 'em scramble for me."

ROUGH-NECKS BLUES

She went out to a lonesome wildcat
She saw her boy-friend there,
With his hands on a pair of Wil-sons
And slush all throu his hair.
With forty-eight long slim fourbles
Racked on the der-rick floor
Now don't get weary roughnecks, for
There's only eighteen more.

"Rack 'er back, Rack 'er Back, God bless 'er"
"He heard the digger shout,
"We're goin' right back in boys,
Just as soon as we get out."
For if I die out on the rig floor
With a chain tong in my hand,
Tell her that I'll still be diggin'
When we reach th' promised land.

With a crown block for my tombstone,
Use a rock bit and carve plain,
"You can go out to the oil field,
But you can't come back again."
If they can't use me way up yonder
They can send me down below
For wherever there's a boom boys
That's where the roughnecks go.

A maiden-lady living in a suburb of Houston was shocked by language used by members of a pipe line gang employed in applying a protective coating to a pipe line running across her property. She complained to the company, and the gang-foreman was asked to report the facts of the incident in writing.

"Yours at hand and contents noted," he replied.

"It was this way: Me and my gang was doping up the 10-inch line. I was ladling out the 'hot stuff' and Bill Johnson was poking up the fire under the kettle. Bill straightened up unexpectedly, and I spilt some hot 'dope' down his neck. Then he says to me whilst he snatched off his shirt, says he: 'You really must be more careful, Slim.'

"Yours respectfully, ——"

Straight to Pay Sand!

...with Appleman Gumbo Bits

The Appleman Bit is designed to give speed and a straight, clean hole. Wherever used, you will find them going *straight to pay sand* and greater savings for the operator.

Features that Give Speed

Self-sharpening blades and water course leading direct to the cutting edge give great speed.

Greater Profits

Sidewall cutting attained by specially designed blades, and a well-prepared hole "bored to size," coupled with lower power costs per foot drilled bring about greater profits.

and a Straighter Hole

Holes drilled by the Appleman Bit are straighter for less weight is needed to feed this bit.

Write for complete information today.

B. K. APPLEMAN
BEAUMONT, TEXAS

Read this!

TWO hundred thousand dollars a year saved around a refinery is an item worth entering on anybody's books. That is the savings on material, that would otherwise have to be written off as junk, credited in 1929 to the reclamation department of the

Note: If you haven't a copy of National Petroleum News for April 2nd in which this article appeared, we will gladly send you a reprint. Just drop us a card.

AND one of the essential features of this unusual saving was the use of Oakite in removing oil, grease and dirt from valves, fittings, pipes, meters, rags and other discarded equipment before repair. Would a saving of $200,000 or even $2,000 look good on your books? This proves it CAN BE DONE! Let us show you how Oakite will help, by speedy, thorough, economical cleaning, without scrubbing or scraping, without danger. Write for the details now!

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*Stocks of Oakite materials are carried in these cities.

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Industrial Cleaning Materials and Methods

10 TIMES LONGER LIFE for Drilling Tools

Blackor is granular in form. Can be applied at the rate of 100 square inches per hour. One ounce covers from 4 to 6 square inches, one layer.

Because the abrasion resistance of Blackor is so great, tools armored with Blackor cut much longer without coming out of hole. Blackor eliminates the necessity of hard inserts because it is as hard as any metal insert. It will outlast hardfacing metals 10 times.

Easily applied with the carbon electric arc. Bonds with the steel—preventing chipping or breaking off. Presents an area totally abrasion-resistant. Leaves no unprotected spots to wear away. Costs less to apply.

If you want to get more hole—faster—put Blackor on your drilling tools. A trial order will convince you!

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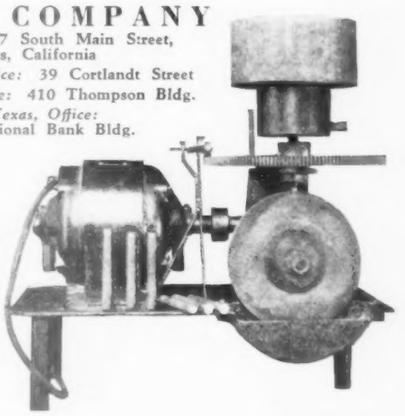

The Blackor laboratory test machine. The abrasion-resistance of Blackor is tested and must meet rigid standards before shipping.

BLACKOR

The Super Abrasion-Resistant Facing

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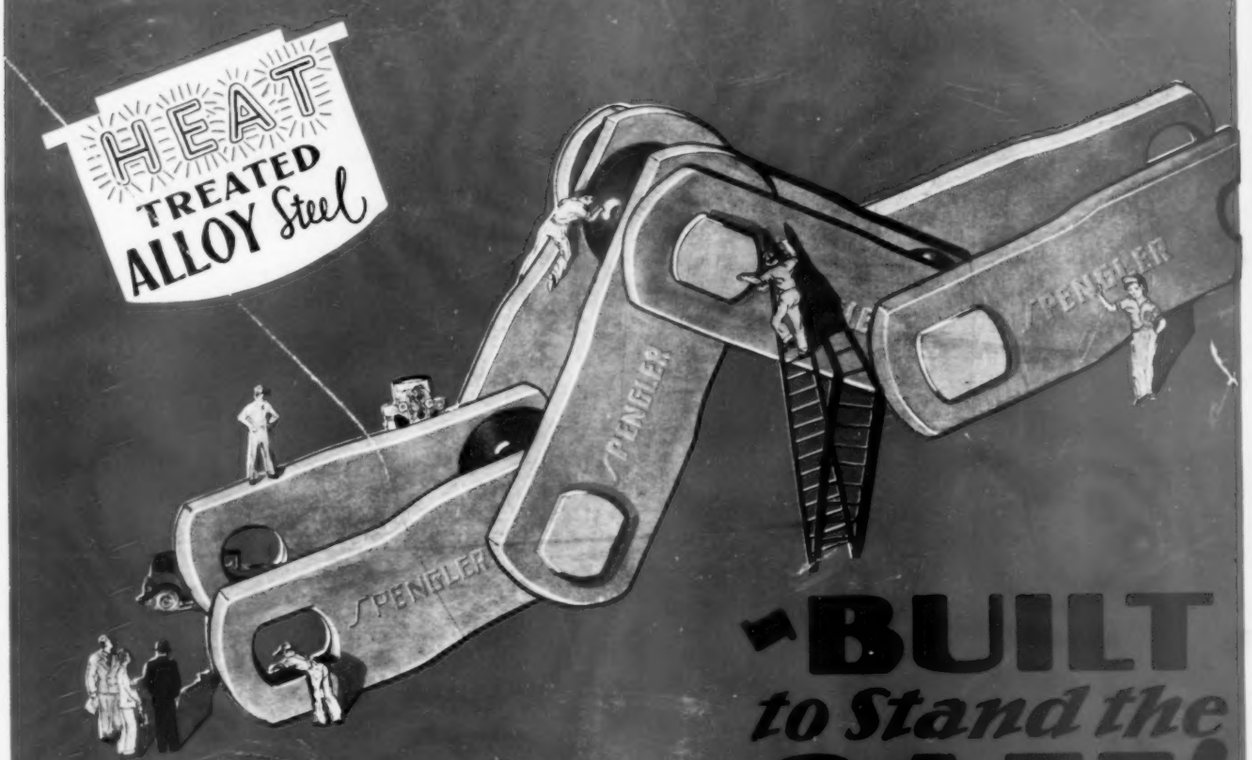

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